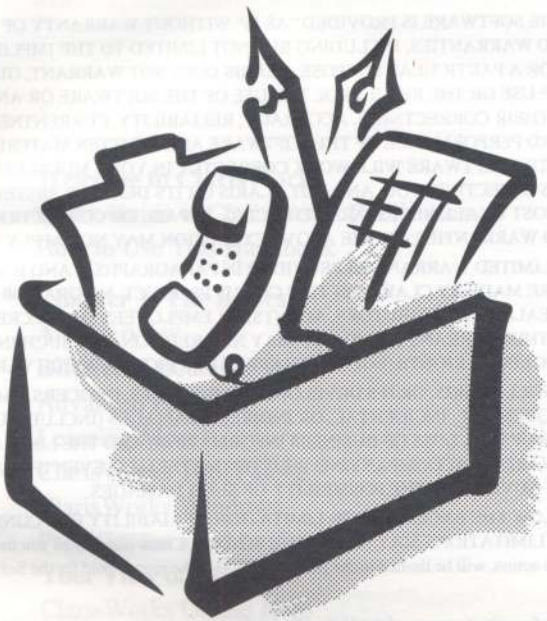
CLARIS™

ClarisWorks™

Handbook



ClarisWorks

Handbook

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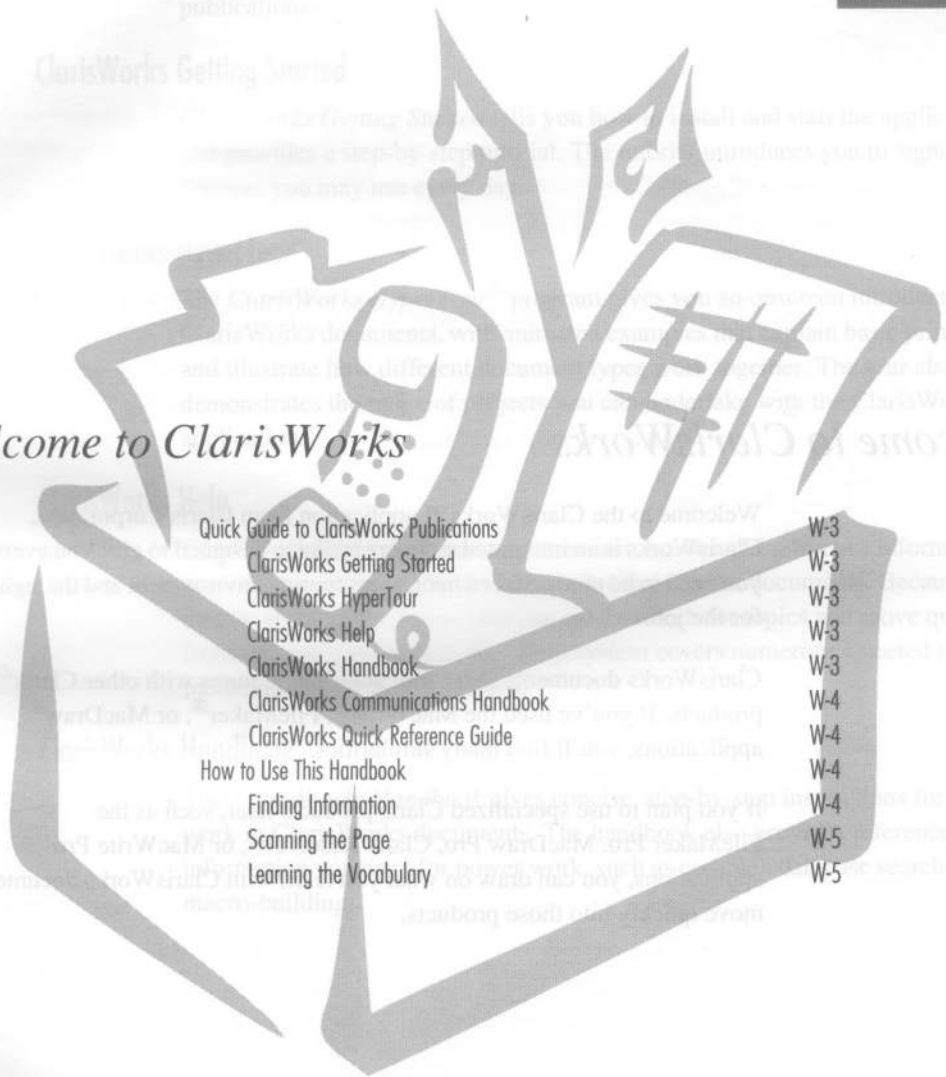

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Welcome to ClarisWorks

Welcome to the ClarisWorks™ application from Claris Corporation. ClarisWorks is an integrated software package designed to give you everything you need to be productive: a natural computing environment and the right tools for the job.

ClarisWorks documents share functions and features with other Claris® products. If you've used the MacWrite®, FileMaker®, or MacDraw® applications, you'll find many similarities.

If you plan to use specialized Claris products later, such as the FileMaker Pro, MacDraw Pro, Claris Resolve™, or MacWrite Pro applications, you can draw on what you learn with ClarisWorks documents to move quickly into those products.

Quick Guide to ClarisWorks Publications

This book, the *ClarisWorks Handbook*, is one of several Claris publications designed to help you learn and use the ClarisWorks application. ClarisWorks publications give you a choice of learning from a book or from computer-based instructions—or both. You'll find what you need in these comprehensive publications.

ClarisWorks Getting Started

ClarisWorks Getting Started tells you how to install and start the application and provides a step-by-step tutorial. The tutorial introduces you to significant features you may use every day.

ClarisWorks HyperTour

The *ClarisWorks HyperTour*® program gives you an onscreen introduction to ClarisWorks documents, with animated examples that explain basic principles and illustrate how different document types work together. The tour also demonstrates the range of projects you can undertake with the ClarisWorks application.

ClarisWorks Help

ClarisWorks Help gives you onscreen instructions and reference information you can use while you're working with ClarisWorks documents. Because the system is computer-based, you can easily search for topics and move quickly from one topic to another. The Help system covers numerous selected topics, including spreadsheet functions.

ClarisWorks Handbook

The *ClarisWorks Handbook* gives concise, step-by-step instructions for doing work in ClarisWorks documents. The handbook also provides reference information you need for power work, such as complex database searches and macro-building.

ClarisWorks Communications Handbook

The *ClarisWorks Communications Handbook* gives easy step-by-step instructions for connecting to online information services and bulletin boards. The handbook also provides reference information for changing connection, terminal emulation, or file transfer tools. A glossary gives definitions of communications terms you may need to know.

ClarisWorks Quick Reference Guide

The *ClarisWorks Quick Reference Guide* lists keyboard shortcuts and gives brief instructions for various tasks. The quick reference will be useful after you've worked through the tutorial and reviewed the handbook.

How to Use This Handbook

This handbook provides step-by-step instructions and reference information. You need not read the whole book, but only those sections or chapters you need for information on specific tasks. Claris strongly recommends that you read or work through the tutorial sessions in *ClarisWorks Getting Started* before you use the handbook for reference.

Finding Information

To look up a major topic, start with the handbook's *main* table of contents. It lists chapters and top-level topics that point you in a general direction.

Once you identify the chapter you need, check the *chapter-level* table of contents. These detailed directories list topics down to the level of specific how-to steps.

If you don't have a general idea of where a topic falls in terms of chapters, refer to the index, which lists tasks and topics alphabetically.

Scanning the Page

Once you've found the topic you want, you can scan pages for specific how-to instructions. Step-by-step instructions are introduced with a "To Do" heading. For example:

To learn how to use ClarisWorks Help

Numbered or single-step procedures follow these special headings.

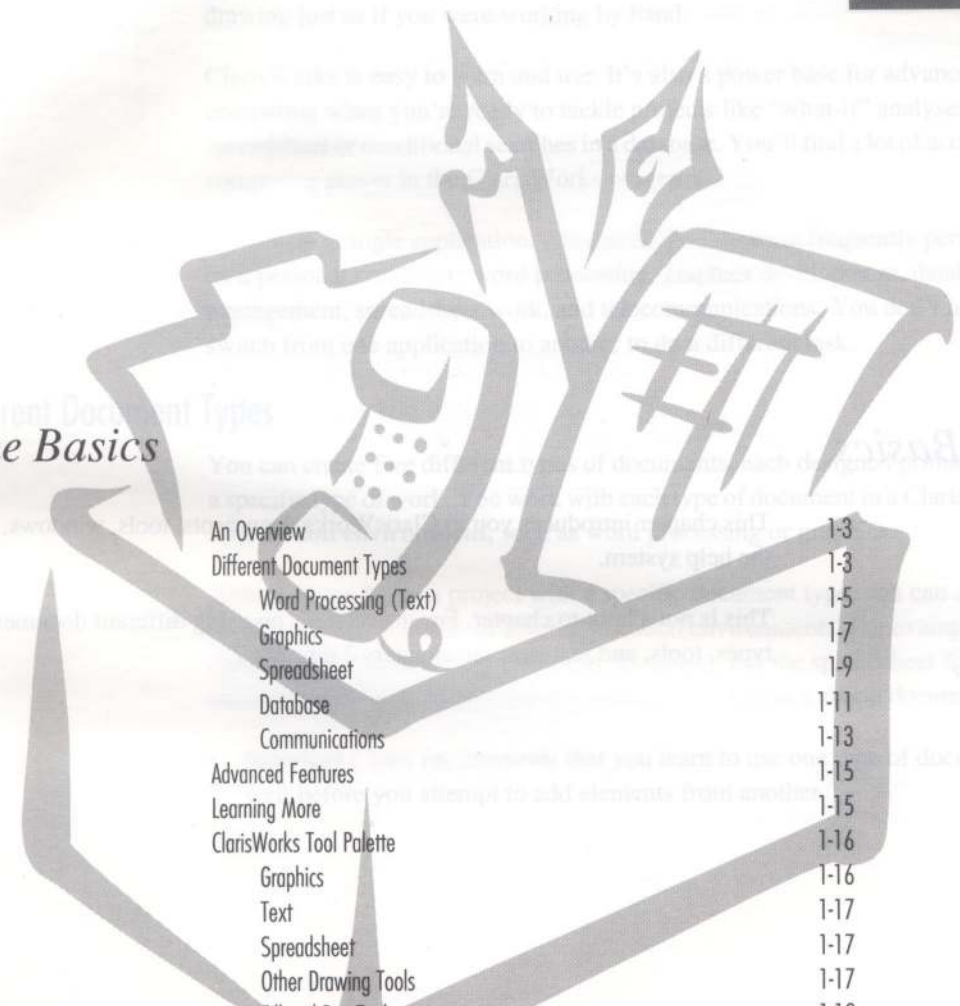
Learning the Vocabulary

Because this handbook is intended for reference—not to be read straight through—you may occasionally encounter a specialized term you don't recognize. You can look up terms in the glossary, which comes before the index at the back of the manual.

Words that appear in **boldface** in this handbook are listed in the glossary.

Chapter 1

The Basics



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Chapter 1

The Basics

This chapter introduces you to ClarisWorks documents, tools, windows, and the help system.

This is not a how-to chapter. For instructions on using different document types, tools, and features, see chapters 2 through 7.

An Overview

The ClarisWorks application is an integrated software package that provides a natural computing environment. "Natural" means you can work on ClarisWorks documents the same way you work with a pencil and a sheet of paper. When you're writing a letter or report, for example, you can sketch a drawing just as if you were working by hand.

ClarisWorks is easy to learn and use. It's also a power base for advanced computing when you're ready to tackle projects like "what-if" analyses in a spreadsheet or conditional searches in a database. You'll find a lot of accessible computing power in the ClarisWorks program.

Now, with a single application, you can do the jobs most frequently performed on a personal computer: word processing, graphics development, database management, spreadsheet work, and telecommunications. You don't need to switch from one application to another to do a different task.

Different Document Types

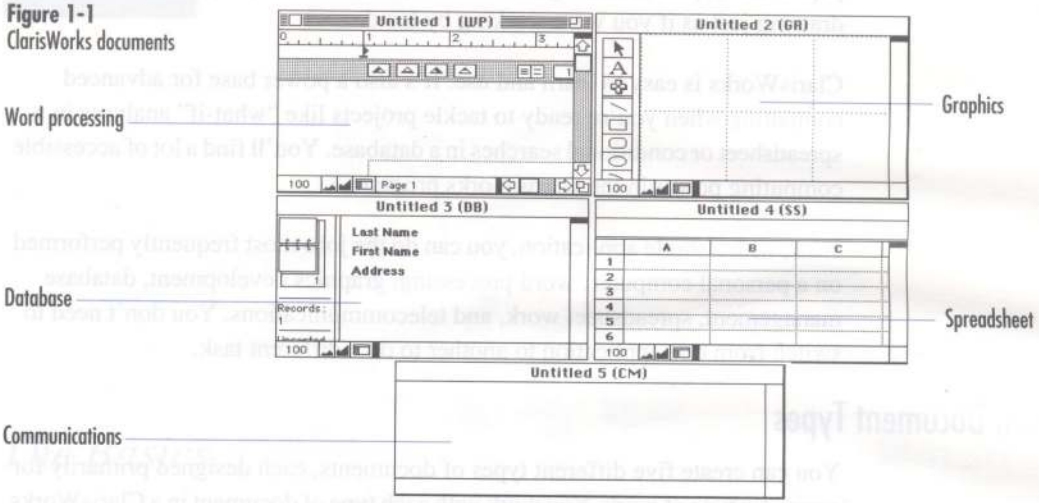
You can create five different types of documents, each designed primarily for a specific type of work. You work with each type of document in a ClarisWorks **application environment,** such as word processing or graphics.

Although you begin a project with a specific document type, you can add **frames** that use features of other application environments. For example, you can add a spreadsheet frame to a text document, use the spreadsheet for calculations, and print text and spreadsheet together as a single document.

- **Important** Claris recommends that you learn to use one type of document well before you attempt to add elements from another.

When you create a new document, it appears in its own special window (figure 1-1), with the tools needed for that document type. (If you need help understanding windows, see "ClarisWorks Windows," later in this chapter, and the *Macintosh System Software User's Guide* that came with your computer.)

Figure 1-1
ClarisWorks documents



Word Processing (Text)

You use a document in the word processing environment primarily to write and format text. A text document is ideal for projects like these:

At the Office

- composing letters, memos, and general correspondence
- writing business reports and research papers
- writing newsletters, articles, and bulletins
- drafting legal contracts and documents
- printing personalized form letters
- writing a business plan

At Home

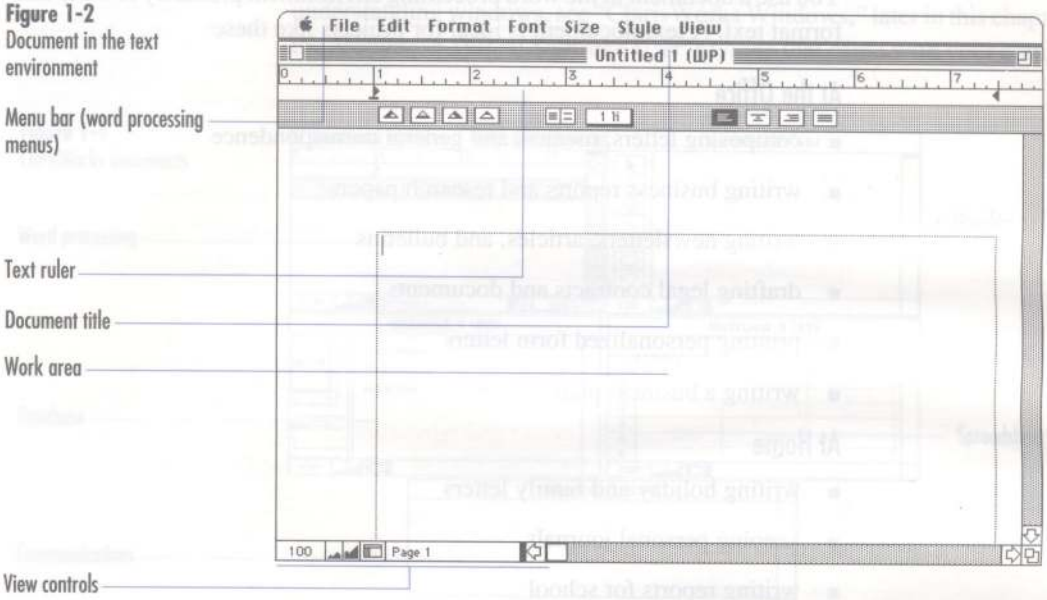
- writing holiday and family letters
- keeping personal journals
- writing reports for school
- keeping club minutes
- writing a family history

ClarisWorks gives you great flexibility in the way you present what you write. Using the multiple-column feature, for example, you can create professional-looking catalogs and reports. You can take the sting out of research papers by creating and numbering footnotes automatically.

You can even combine a text document with a database to produce the personalized letters mentioned above. In a business plan, you can add financial tables created in a spreadsheet frame.

Figure 1-2 shows a new text document, ready for use.

Figure 1-2
Document in the text environment



At the top of the text window, you see the word processing menus and, below the document title, the text ruler. You use the text ruler to set margins, line spacing, tabs, and text alignment.

The **work area** is the part of a document that contains what you type or draw. In this case, the work area is the space you use to write text or to add other objects to a text document.

More Information on Word Processing

See chapter 3, "Working with Text."

Graphics

You use graphics documents primarily for artwork and page layout. As you learned in the tutorial, you can place linked text frames in a graphics document and use the graphics rulers for precise control of layouts.

A graphics document is a good choice for projects like these:

At the Office

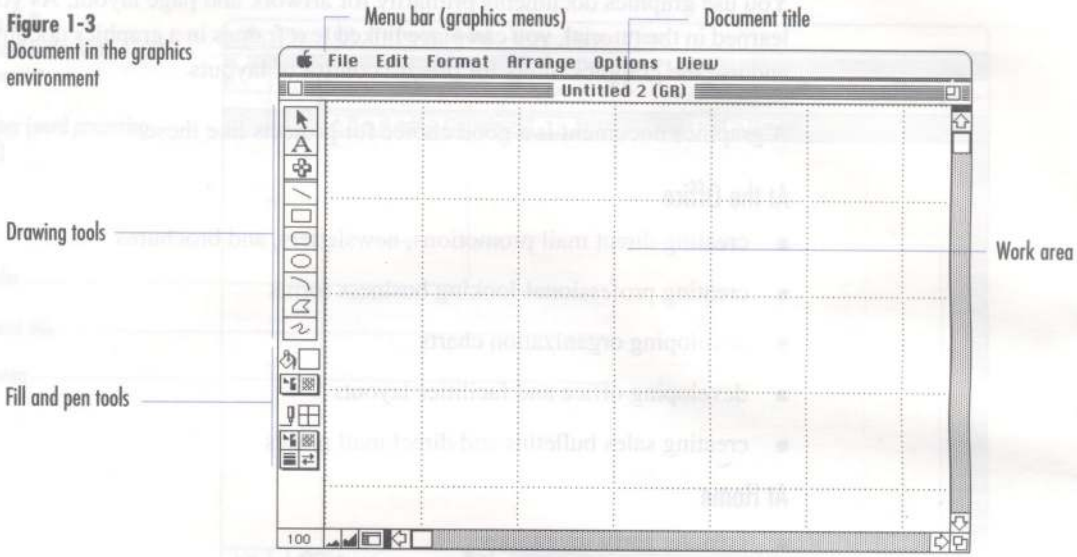
- creating direct mail promotions, newsletters, and brochures
- creating professional-looking business forms
- developing organization charts
- developing office and facilities layouts
- creating sales bulletins and direct mail pieces

At Home

- creating party invitations
- creating club and organization announcements
- documenting the family tree (genealogy)
- creating school artwork
- doing furniture-arrangement diagrams

Figure 1-3 shows a new graphics document.

Figure 1-3
Document in the graphics environment



Notice the new menus, Arrange and Options, in the graphics document. Menus change when you change environments, whether you open a new document in the environment or switch environments within the same document. The menus change so that you have access to the commands when you need them.

The gridlines you see in the work area, along with graphics rulers (not shown in figure 1-3), help you draw objects and align them precisely. You use the drawing tools to create graphic shapes or to draw objects that can contain text or spreadsheets. With the fill and pen tools, you can change an object's line width, fill color, and pattern.

More Information on Graphics

See chapter 4, "Working with Graphics."

Spreadsheet

You use a spreadsheet document primarily to work with numbers. A spreadsheet document gives you the ability to perform financial or scientific calculations, create professional-looking reports, and generally organize numeric information. You can use a spreadsheet to present any type of information that's suited to a columnar format.

If you want to turn numbers into pictures for quick comprehension, you can turn the numbers into charts. You can then dress the charts up with different fill colors and patterns.

A spreadsheet document is good for projects like these:

At the Office

- analyzing financial performance
- maintaining a checkbook
- producing income statements (P & Ls)
- managing assets
- analyzing stock performance
- creating expense reports
- maintaining tax records
- creating sales and market forecasts
- analyzing and comparing loans

At Home

- managing checkbooks and savings accounts
- tracking performance of stocks and bonds
- documenting tax-related expenses
- charting the children's growth
- tracking and charting sports statistics

Figure 1-4 shows a new spreadsheet document, ready for data entry.

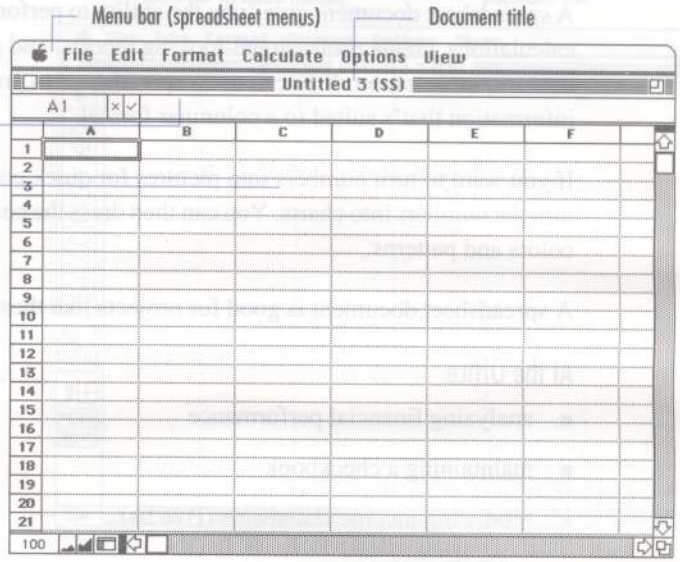


Figure 1-4
Document in the spreadsheet environment

In a spreadsheet document you type and edit data in the data entry bar. When you confirm an entry, what you typed appears in a spreadsheet cell (the intersection of a column and a row).

More Information on Spreadsheets

See Chapter 5, "Working with Spreadsheets."

Database

Database documents are designed to manage and organize large collections of information.

In a database document you can accumulate information, sort it, and print attractive reports. You can also perform sophisticated searches to find and work with only the information you want. By creating different layouts, you can organize and present the same data in many different ways.

A database document is a good choice for projects like these:

At the Office

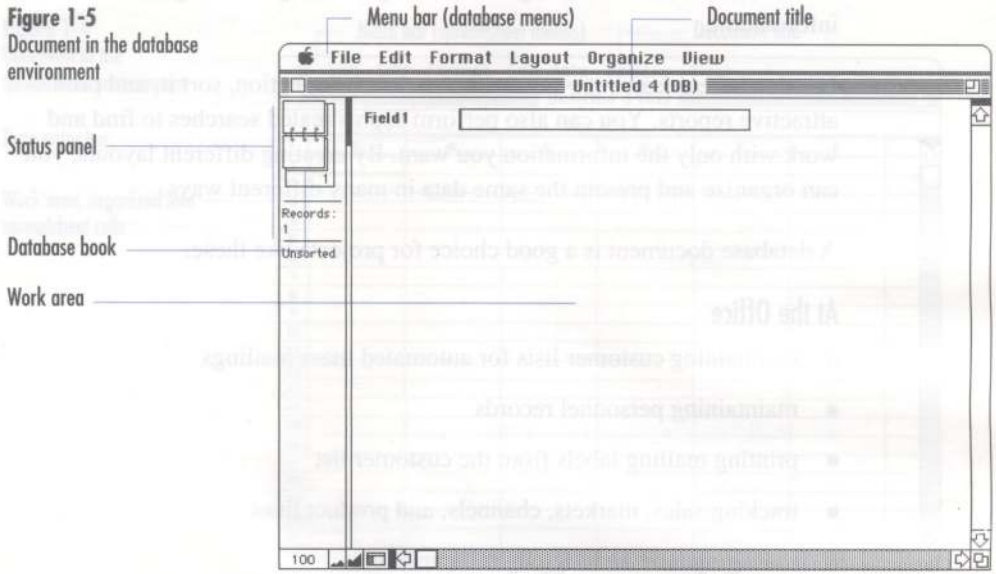
- maintaining customer lists for automated mass mailings
- maintaining personnel records
- printing mailing labels from the customer list
- tracking sales, markets, channels, and product lines
- managing time and logging billable hours.

At Home

- maintaining address and telephone lists
- cataloging household furnishings for insurance purposes
- keeping track of your favorite recipes
- creating bibliographies for school reports
- cataloging CDs, video or audio tapes, and records
- cataloging acquisitions such as collectibles or stamps

Figure 1-5 shows a new database document.

Figure 1-5
Document in the database environment



You work in a database document three different ways, depending on whether you're entering data, working with a layout, or finding information. The database document in figure 1-5 shows a document as it looks when you're ready to enter data.

The database book and status panel help you move through the document and keep track of what you're doing.

More Information on Databases

See chapter 6, "Working with Databases."

Communications

A communications document is different from other ClarisWorks documents. It conducts a communications session between your Macintosh and an online information service, bulletin board, or another computer.

Using ClarisWorks as a communications tool, you can work on projects like these:

At the Office

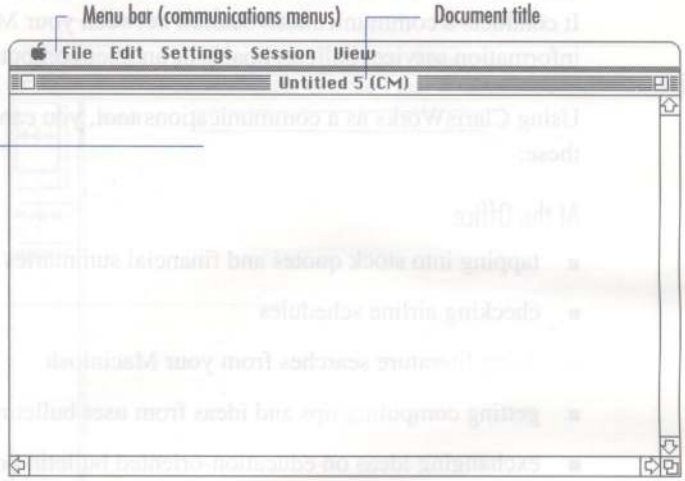
- tapping into stock quotes and financial summaries
- checking airline schedules
- doing literature searches from your Macintosh
- getting computing tips and ideas from user bulletin boards
- exchanging ideas on education-oriented bulletin boards

At Home

- doing research for school reports
- joining a hobby-related bulletin-board discussion
- shopping
- finding new games for the Macintosh

Figure 1-6 shows a new communications document.

Figure 1-6
Document in the communications environment



With a communications document you can connect to a remote computer and receive, send, and save data.

Options are preset for most commonly used online services, so all you usually have to do is add the telephone number.

More Information on Communications

See the *ClarisWorks Communications Handbook*.

Advanced Features

ClarisWorks offers several sophisticated features that give you maximum computing power.

Using text and spreadsheet frames, for example, you can create professional page layouts and presentations. With mail merge, you can customize mailings by using information stored in a database. Finally, macros give you the speed and convenience you need for top productivity.

If you worked through the final chapter of the tutorial in *ClarisWorks Getting Started,* you're already familiar with frames. Mail merge and macros may be unfamiliar concepts, but the features are simple to learn and use.

- **Note** For more information on frames, mail merge, and macros, see chapter 7, "Using Advanced Features."

Learning More

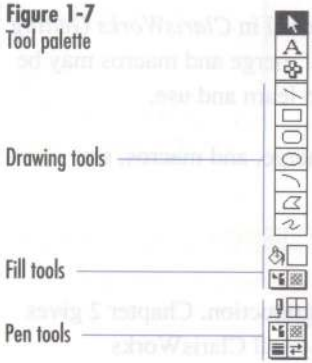
This brief description of documents is only an introduction. Chapter 2 gives how-to instructions for features that are common to all ClarisWorks environments. Chapters 3 through 6 cover each individual environment and document type.

The rest of this chapter introduces you to ClarisWorks tools and windows, different views of pages, and the ClarisWorks Help system.

ClarisWorks Tool Palette

You use the ClarisWorks tool palette, shown in figure 1-7, to draw objects and to change an object's fill pattern and color. As you learned in the tutorial (chapter 2 of *ClarisWorks Getting Started*), objects can be graphic shapes or frames that contain text or spreadsheets. You can show or hide the tool palette (in any document except communications) by choosing Show Tools or Hide Tools from the View menu.

Figure 1-7
Tool palette



Graphics

Graphics tool

In the graphics environment, the **graphics tool, drawing tools,** and the **fill** and **pen tools** are active, along with graphics-related menus. When the graphics tool is selected, the pointer you move with the mouse is the **arrow pointer**. You use the graphics tools to create and work with objects. You use the arrow pointer to select, move, and resize existing objects.

When you want to draw an object in a non-graphics document, you begin the process by selecting the graphics tool or a drawing tool. The application then switches to the graphics environment and menus. You can then use graphics commands and features to create an object or revise a selected object. You can't draw anything with the graphics tool; it simply activates the other drawing tools, turns on graphics menus, and selects objects when you click them.

To draw graphic shapes, you first select one of the drawing tools. For details, see chapter 4, "Working with Graphics."

To draw text and spreadsheet frames, you select the appropriate tool—text tool or spreadsheet tool—and then draw the frame (an object). For details, see chapter 7, "Using Advanced Features."

Text

Text tool

In the text environment, the **text tool** ("A") and text-related menus are active. When the text tool is selected, the pointer you move with the mouse is the **I-beam pointer.**

You use the text tool to type text. You use the I-beam pointer to move the text insertion point from place to place and to select existing text. For details, see chapter 3, "Working with Text."

You can type text in other environments by selecting the text tool and clicking in the document. The application creates an object (a frame) to hold the text. You also use the tool to draw text frames. For details, see chapter 7, "Using Advanced Features."

Spreadsheet

Spreadsheet tool

In the spreadsheet environment, the **spreadsheet tool** is active. When this tool is selected, the pointer you move with the mouse is the **crossbar pointer.** You use the spreadsheet tool when you enter data and formulas and do other work in a spreadsheet document. You use the crossbar pointer to select different portions of the spreadsheet. For details, see chapter 5, "Working with Spreadsheets."

You also use this tool to draw frames that contain spreadsheets. For details, see chapter 7, "Using Advanced Features."

Other Drawing Tools

You use the rest of the drawing tools to create shapes such as rectangles, freehand lines, arcs, and polygons. In combination, these shapes can be used to create complex and interesting drawings. For details, see chapter 4, "Working with Graphics."

Fill and Pen Tools

With the fill and pen tools, you can change the fill color and pattern of objects, change the pen width, color, and pattern used for the lines that form the borders of an object, and add arrowheads at the ends of lines. For details, see chapter 4, "Working with Graphics."

ClarisWorks Windows

The contents of a document are displayed in a window, with the name of the document in the title bar. Around the borders of a window you see several special window controls. You use these controls to move around in a document, change the size of the window, zoom closer to or farther from the document, and hide or show the ClarisWorks tool palette (figures 1-8 and 1-9).

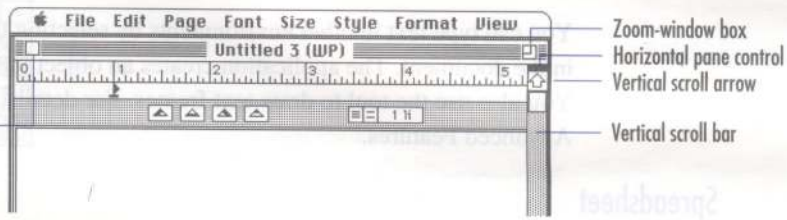
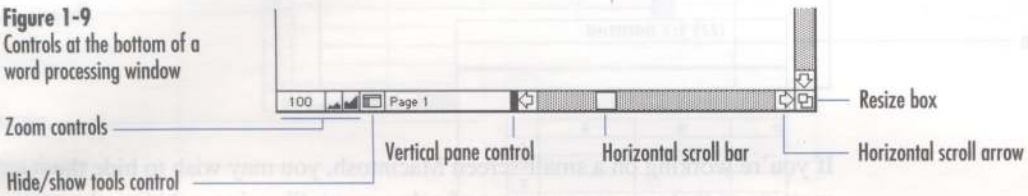


Figure 1-8
Controls at the top of a word processing window

You click the close box to close a window, the zoom-window box to fill the screen with a window, and the horizontal pane control to split the window into separate panes. The horizontal pane control is shown in figure 1-8. For information on using the pane controls, see "Changing Your View of a Page," in chapter 2.

You use the vertical scroll bar and scroll arrows to move up and down in a document, and the horizontal scroll bar and scroll arrows to move right and left. Figure 1-9 shows the horizontal scroll bar and arrows. For information on scrolling, see the *Macintosh System Software User's Guide* that came with your computer.

Figure 1-9
Controls at the bottom of a word processing window



You use the zoom controls to enlarge or reduce your view of a document, and the hide/show tools control to bring the tool palette into view or hide it. For information on these tools, see "Changing Your View of a Page," in chapter 2.

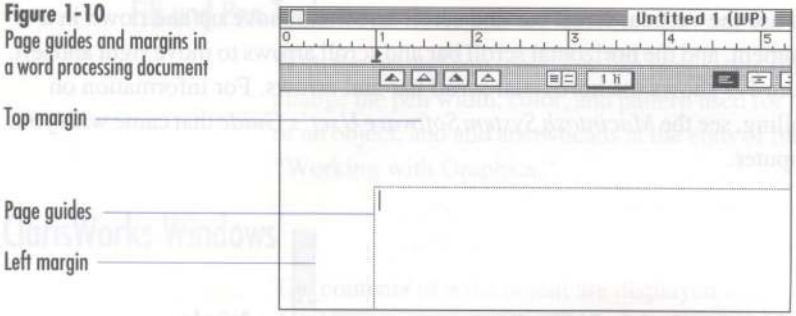
Dragging the resize box changes the size of the window. If you need more information, see the *Macintosh System Software User's Guide*.

You can switch from one window to another and open multiple views of the same document. For information on multiple views, see "Changing Your View of a Page," in chapter 2.

Page Guides and Margins

A document in a ClarisWorks window shows a light border around each page. The borders, called **page guides,** show where the document's top, bottom, left, and right margins are set (figure 1-10). Around the page guides are the page margins—the blank edges of the page.

Figure 1-10
Page guides and margins in a word processing document



If you're working on a small-screen Macintosh, you may wish to hide the margins so that you can see more of a document. Showing or hiding the page guides and margins changes the way the page looks on the screen, but not the way the page is printed. For details, see chapter 2, "Working with Documents."

Your View of a Page

In a ClarisWorks document, you can see pages exactly as they will be printed. This view of pages is called **page view** (figure 1-11). In Macintosh terms, a document with page view turned on is **WYSIWYG:** "What You See Is What You Get."

Many Macintosh applications require that you switch to a static "preview" setting to view pages as they will be printed. In ClarisWorks documents, you can see the actual pages, *and* work with them, in a single view.

For information on opening new views, see "Working in Multiple Views," in chapter 2.

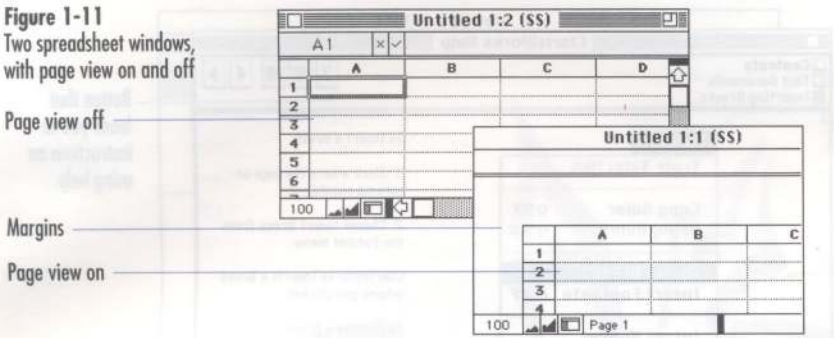


Figure 1-11
Two spreadsheet windows, with page view on and off

- **Note** Page view is always on in WP doc, but you can hide margins.

In page view, you see the margins that will appear on the printed page, so you can tell where right margins, left margins, and pages begin and end. You can also see headers, footers, and automatically inserted page numbers, if any.

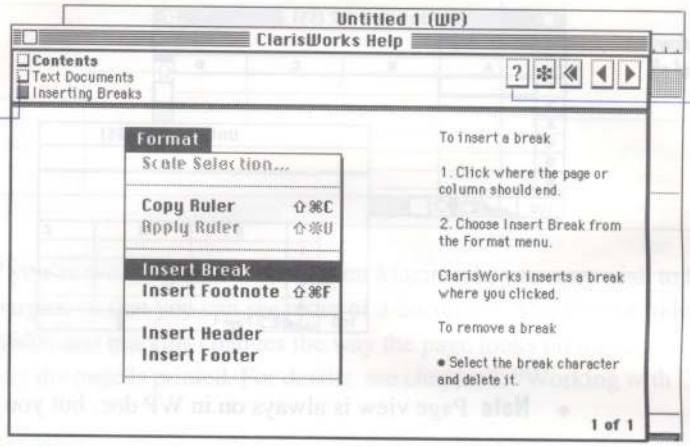
- **Important** One WYSIWYG exception occurs in a database document, where you won't see sliding objects in their final positions until you print. For information on sliding objects, see "Rearranging and Customizing Layouts," in chapter 6.

ClarisWorks Online Help

ClarisWorks comes with a complete system of online help—electronic instructions you can use instead of or as a supplement to the printed handbooks that come with the application. **Online** help means that you have direct access to the help system on the computer screen, as you work.

Help gives you quick access to information (figure 1-12). You can move from topic to topic virtually as quickly as you can click the mouse button.

Figure 1-12
Sample card from the help system



If you're like many new computer users, you may be cautious about using online help because you feel more familiar with printed manuals. ClarisWorks Help is simple to use. The more you explore it, the more comfortable you'll feel about using it.

For instructions on opening the help system, see chapter 2, "Working with Documents."

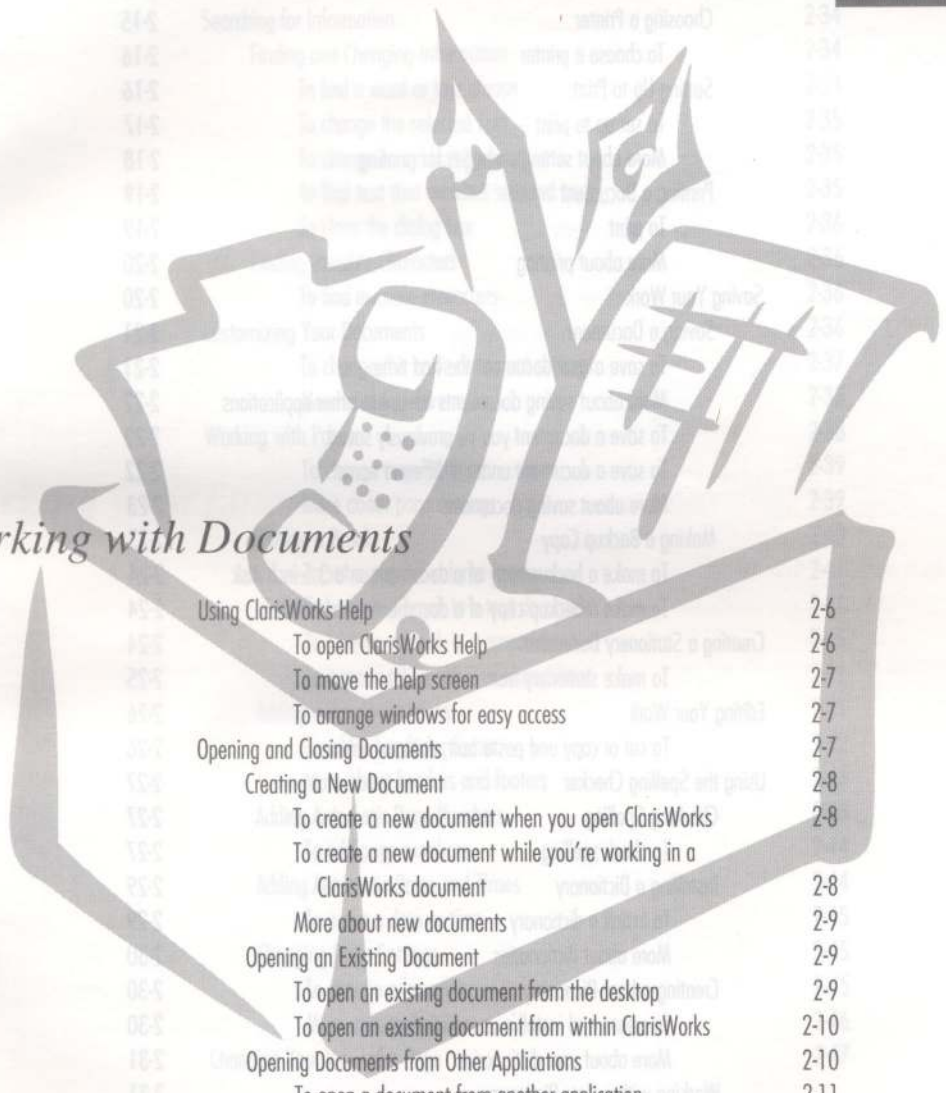
Where to Go from Here

This chapter provided an introduction to ClarisWorks elements. The rest of the handbook gives step-by-step instructions for creating and working with different types of ClarisWorks documents.

You don't need to read this handbook in any particular order. To find a topic, refer to the beginning of each chapter, where you'll find a detailed table of contents, or look in the index at the back of the book.

Chapter 2

Working with Documents



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Chapter 2

Working with Documents

This chapter gives step-by-step instructions on tasks and features that are common to text, graphics, spreadsheet, and database documents.

You can read the instructions in any order. Use the chapter table of contents to find the topic you want, and then turn directly to that topic.

Using ClarisWorks Help

As you learned in chapter 1 and in the tutorial, the ClarisWorks application comes with a complete system of online help.

You can leave a ClarisWorks document open as you look up topics in the help system. You can then switch back and forth between a ClarisWorks document and a help screen when you need more information.

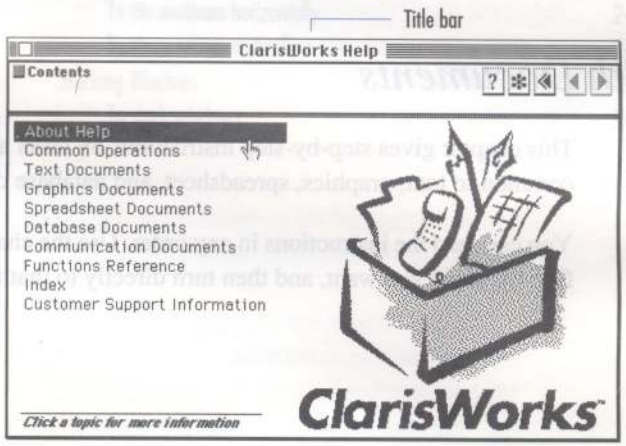
To open ClarisWorks Help

1. **Choose Help from the Apple menu (or press Command-? or, on an extended keyboard, press Help).**

   In System 7, select "ClarisWorks Help" at the bottom of the ? menu.

   A help window opens. You see the first card, an interactive table of contents for the system (figure 2-1). The topics you see are actually **buttons**—screen elements you click to move to the topic.

Figure 2-1
Help contents



2. **If you need instructions on how to use the system, click About Help.**

   The About Help series shows you how the system is organized, how to move about in the system, and how to find the information you want.

3. **After you review the instructions, click Contents and then click any topic.**

   You see the first card in a series related to the topic you clicked.

You can continue to open, close, and work with ClarisWorks documents while the help window is present.

To move the help screen

- Drag the help window by its title bar.

To arrange windows for easy access

- Drag ClarisWorks windows and the help window into a "stack," so the corners overlap (figure 2-2).

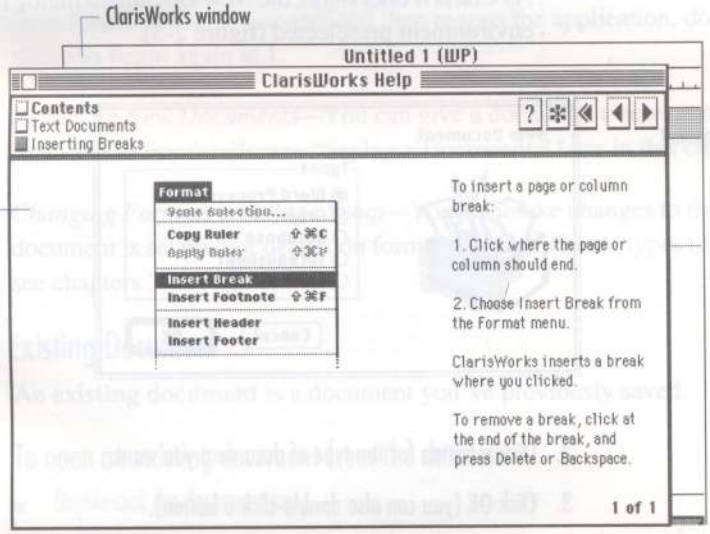


Figure 2-2
Help window arranged on top of another document

You can now click a corner of any one of the stacked windows to bring that window into view.

Opening and Closing Documents

A **document** is a Macintosh file created by an application. In the ClarisWorks application, you can create and work with five different types of documents, each of which is designed primarily for a specific task—word processing, spreadsheet work, database management, graphics, or communications.

Creating a New Document

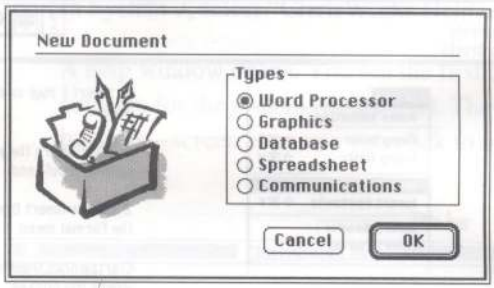
Your choice of a document type depends on the kind of work you plan to do. For a brief description of the document types, see "Different Document Types," in chapter 1.

To create a new document when you open ClarisWorks

1. **Double-click the ClarisWorks application icon (or select the icon and choose Open from the File menu).**

   As ClarisWorks starts, the New Document dialog box appears with the text environment preselected (figure 2-3).

Figure 2-3
Creating a new document



2. **Click a button for the type of document you want.**
3. **Click OK (you can also double-click a button).**

   The new document opens on the desktop. If you open a word processing (WP) document, ClarisWorks names it *Untitled 1 (WP)*.

   If you create another type of document, you see these initials: GR (graphics), SS (spreadsheet), DB (database), and CM (communications).

To create a new document while you're working in a ClarisWorks document

1. **Choose New from the File menu (or press Command-N).**

   You see the New Document dialog box (figure 2-3).

2. Follow steps 2 and 3 in "To create a new document when you open ClarisWorks," just preceding.

More about new documents

Shortcuts for Creating Documents—In the New Document dialog box, you can use the up and down arrow keys or Tab key to move the selection from one type of document to another.

Document Numbering—Documents are numbered in the order in which you create them. Numbering begins with the first document you create after you open ClarisWorks. If you quit and then reopen the application, document numbers begin again at 1.

Renaming New Documents—You can give a document a new name when you first save it. For details, see "Saving a Document," later in this chapter.

Changing Formats and Page Setup—You can make changes to the way a new document is set up. For details on formatting the different types of documents, see chapters 3 through 7.

Opening an Existing Document

An **existing document** is a document you've previously saved.

To open an existing document from the desktop

- Double-click the document icon.

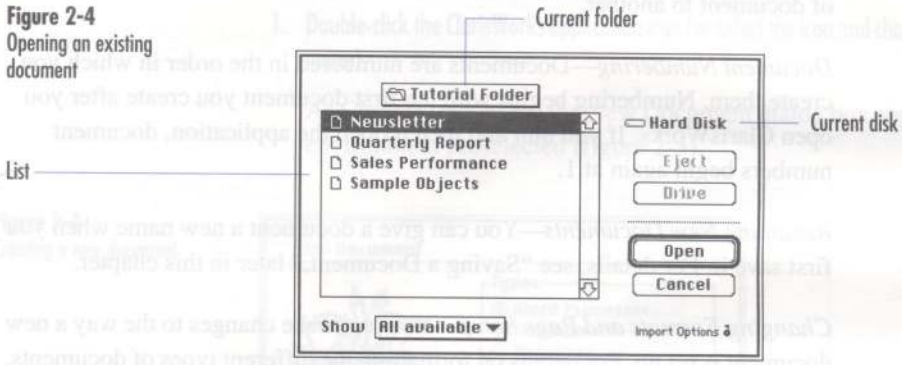
  ClarisWorks automatically starts and opens the document.

To open an existing document from within ClarisWorks

1. Choose Open from the File menu (or press Command-O).

   The Open dialog box appears (figure 2-4). The list on the left shows available documents.

Figure 2-4
Opening an existing document



   You may need to switch folders and disk drives to find the document.

   If you want to open a document created in another application, see "Opening Documents from Other Applications," next in this section.

2. Select the name of the document you want, and click Open (or double-click the document name).

   The document opens. You can open as many documents as memory allows. You are alerted when memory is low.

Opening Documents from Other Applications

To open documents from other applications, the ClarisWorks application uses programs called **translators.** These translators change the file format of a non-ClarisWorks document into the ClarisWorks file format. (**File format** refers to the way an application organizes and stores the contents of a document.)

You can open documents from the following applications when their translators are installed. See Installing ClarisWorks in *ClarisWorks Getting Started*.

- MacWrite, MacWrite II, MacWrite II Stationery
- Microsoft Word, Microsoft Write, Microsoft Word PC
- AppleWorks® (word processing, spreadsheet and database files)
- AppleWorks GS (word processing only)
- Acta
- Microsoft Works (word processing, spreadsheet and database files)
- WriteNow, WriteNow NeXT
- Word Perfect, Word Perfect PC

You can also open the following general file formats:

- ACSII Text (tab delimited)
- PICT and Encapsulated PostScript (EPS), TIFF
- DIF and SYLK (many spreadsheets use these formats; Microsoft Excel can save in the SYLK format)

To open a document from another application

1. Within ClarisWorks, choose Open from the File menu.

   You see the Open dialog box, shown earlier in figure 2-4.

2. Click the import options flag (figure 2-5).

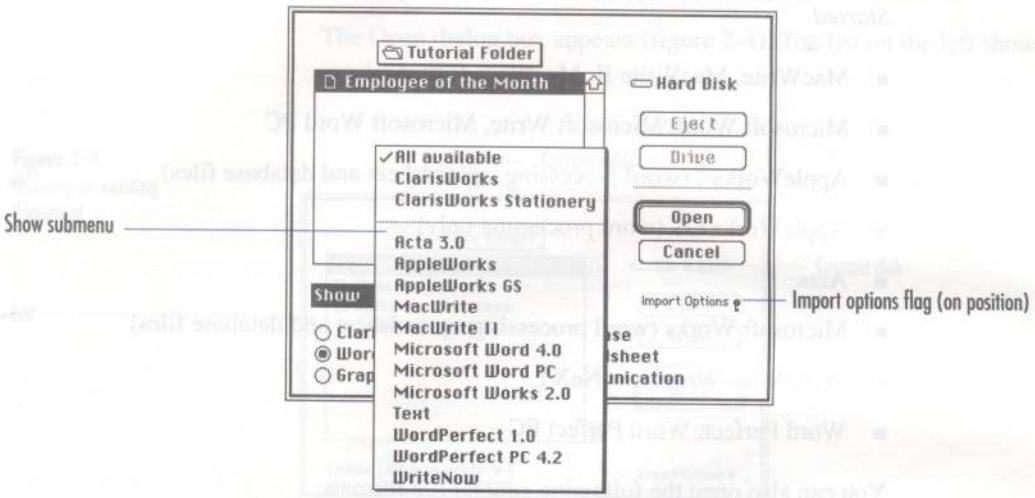
   A series of buttons appears at the bottom of the dialog box.

3. Select the button for the type of document you want to open (for example, graphics or spreadsheet).

4. Choose a document type from the Show pop-up menu (figure 2-5).

   The list of available documents changes to show only those of the type whose name you chose. You must have the appropriate translator for a specific file format (see the list earlier in this section).

Figure 2-5
Options for other applications



5. **Select the name of the document you want and click Open (or double-click the file name).**

   ClarisWorks opens the document and adds the word *Converted* to the title. A dialog box informs you of progress as the conversion takes place.

More about translators

SYLK and DIF—SYLK (Symbolic Link Format) and DIF (Data Interchange Format) are file formats that are oriented to rows and columns. These formats are only used in spreadsheet and database applications. If you open documents in SYLK format, you can import text, numbers, formulas, functions, and text styling such as bold and italics.

"Saving Out"—If you want to open a document from an application that isn't listed, try this: Open the document in the other application and save it in a format that's compatible with ClarisWorks translators. (This process is sometimes called "saving out.") For example, if a spreadsheet application uses SYLK format, you can save the spreadsheet in SYLK format. You can then open it as a ClarisWorks document.

Other Translators—Several software companies have developed translators that allow you to open documents from applications not included in the list shown earlier. To work with ClarisWorks, these translators must be installed in the Claris Translators folder (inside the Claris folder). Claris takes no responsibility for these translators.

Inserting Whole Documents

You can insert an entire graphics or text document into another ClarisWorks document in one step. Inserting a document eliminates the need to open another document, copy an item, and return to the original document to paste the item.

You can insert the following types of documents:

- MacWrite, MacWrite II (text)
- AppleWorks, AppleWorks GS (text)
- Microsoft Word, Microsoft Write, Microsoft Works, Microsoft Word PC (text)
- WriteNow, WriteNow NeXT (text)
- Acta (text)
- Word Perfect, Word Perfect PC (text)
- RTF (text)
- Text (text-only ASCII)
- MacPaint® (graphics)
- PICT, PICT2 (graphics)
- EPSF (graphics)
- TIFF (graphics)

To insert a text or graphics document

1. **In the receiving document, set the insertion point at the spot where you want the inserted document to appear.**

   In a graphics document, the document is inserted where you last clicked in the window. In a text document or frame, the document is inserted at the insertion point.

2. **Choose Insert from the File menu.**

   You see the Insert dialog box (figure 2-6).

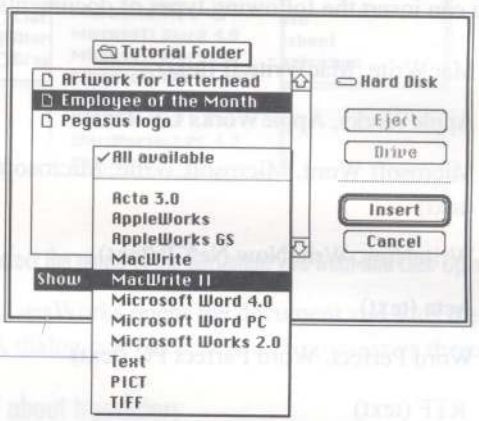


Figure 2-6
Inserting a document

3. **Choose the document type from the Show pop-up menu.**
4. **Select the name of the document you want and click Insert (or double-click the document or file name).**

The document is inserted in the current document.

Closing a Document or Window

It's always wise to close documents and windows before you close ClarisWorks and before you shut down the Macintosh.

- **Low Memory** Numerous documents and windows can take up a lot of memory. You may get low-memory messages if you have too many open at the same time.

To close a document or window

1. Click anywhere in a document to activate the window.
2. Click the close box, press Command-W, or choose Close from the File menu.

   If you have multiple windows open, the next window is activated as soon as you close the active window.

   If you haven't saved the document or recent changes to it, you're given the opportunity to save the document.

To close all windows

- Hold down the Option key and choose Close from the File menu.

Or,

- Hold down the Option key and click the close box of the active window.

  If you haven't saved the document or recent changes to it, you're given the opportunity to save each document.

Printing Your Documents

Before you try to print a document for the first time, check these factors:

- Is the printer plugged in and switched on?
- Is the cable from the printer to the Macintosh inserted in the proper Macintosh port?
- Do you have paper in the tray (LaserWriter, StyleWriter) or at the top of a form (ImageWriter)?
- If you have an ImageWriter, is the Select light on?
- Is the Chooser properly set? (See the next section.)

Choosing a Printer

When you first use your printer, or when you change printers, you need to identify the printer to the Macintosh system software. You do this with the Chooser desk accessory. These instructions summarize the steps. For complete information, and for information on using Chooser on a network, see your printer manual.

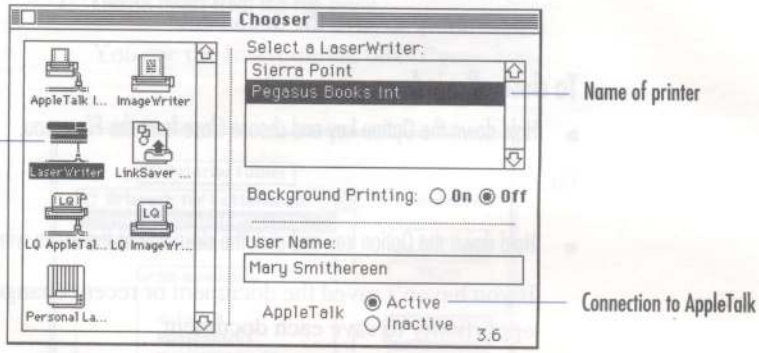
If you've already set Chooser options for your printer while working in another application, you don't have to re-do the steps.

To choose a printer

1. **Choose Chooser from the Apple menu.**

   The Chooser window opens (figure 2-7).

Figure 2-7
Choosing a printer



2. **Select your printer type, a printer name, and the options you want for Background Printing and AppleTalk.**

   The options vary with your printer.

3. **Click the close box (or choose Close from the File menu).**

   The printer has now been identified by the Macintosh. You don't have to repeat this process until you change printers.

Setting Up to Print

You don't have to change the way a document is set up to print if you want to use the preset options. If you wish to change the page setup for printing, this section shows you how.

- **Printer Type** The following instructions document printing with a LaserWriter. If you have a different printer, some procedures may be different. See the manual that came with your printer.

To set up to print

1. **Choose Page Setup from the File menu.**

   You see the Page Setup dialog box (figure 2-8). The specific options shown may vary slightly because the Macintosh automatically changes the options to match the printer it's connected to. For additional details, see the manual that came with your printer.

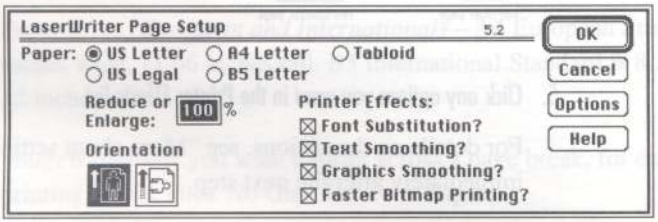


Figure 2-8
Setting up for printing (LaserWriter)

2. **Click a paper size.**

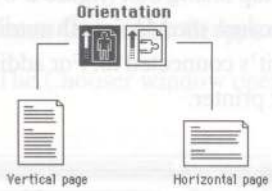
   See "More about setting up pages for printing" at the end of this section, for details on paper size.

3. **If you want to reduce or enlarge the document when you print, type a percentage in the Reduce or Enlarge box.**

   Actual size is 100%. Percentages under 100 reduce the image, and percentages above 100 enlarge it. For example, 75% reduces the image to 75% of actual size, 125% enlarges the image to 125% of actual size. You can use any percentage from 25% to 400% on the LaserWriter. The percentage varies on other printers.

4. Click one of the Orientation icons to select a vertical (portrait) page or a horizontal (landscaped) page (figure 2-9).

Figure 2-9
Orienting the page



5. Click any options you want in the Printer Effects list.

   For details on the options, see "More about setting up pages for printing," immediately after the next step.

6. Click OK.

   You're now ready to print the document. See "Printing a Document," later in this section.

More about setting up pages for printing

Font Substitution—This option substitutes a suitable font for any font your printer doesn't have. On the LaserWriter II, the Macintosh fonts Geneva, New York, and Monaco are converted into the LaserWriter II fonts Helvetica, Times, and Courier.

Text and Graphics Smoothing—This option helps minimize jagged edges on graphic images and on Macintosh screen fonts that have no corresponding printer fonts.

Faster Bitmap Printing—This option generally speeds up the printing of documents that contain graphic images such as those produced in MacPaint. If you have trouble printing a document that contains these images, try turning off this option.

Saving Changes—Only the current, open document is affected by changes you make in the Page Setup dialog box. You can, however, save the document as ClarisWorks stationery and preserve the settings for future use. See "Creating a Stationery Document," later in this chapter.

Paper Sizes (United States)—U.S. Letter is 8.5 inches wide, 11 inches tall. U.S. Legal is 8.5 inches wide, 14 inches tall. A No. 10 Envelope is a standard business envelope.

Paper Sizes (European and International)—A4 European Standard is 8.25 inches wide, 11.66 inches tall. B5 International Standard is 8.25 inches wide, 12 inches tall.

ImageWriter—If you want to print across a page break, for example when printing labels, click No Gaps Between Pages.

Printing a Document

To print a document, you must first identify the printer to the Macintosh (see "Choosing a Printer," earlier in this section). If you want to change any of the preset options, see "Setting Up to Print."

To print

1. With the document open, choose Print from the File menu (or press Command-P).

   The Print dialog box opens (figure 2-10). The dialog box looks different if you're using a printer other than a LaserWriter.

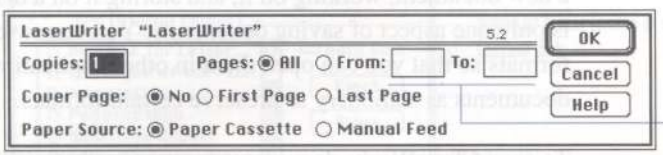


Figure 2-10
Printing (LaserWriter)

2. In the Copies box, type the number of copies you want.

   For a description of options, see "More about printing."

3. Click OK.

   ClarisWorks prints the document.

More about printing

Preset Options—Options in the Print dialog box are preset to print one copy, all pages, with no cover page, from the paper cassette.

Page Range—You can specify the pages you want to print by typing the page numbers in the From...To boxes. To print from a page somewhere in the middle to the end of a document, type the starting page number in the From box and leave the To box blank. To print one page only, type the same page number in both boxes.

Cover Page—If you click First Page, the printer produces a cover sheet at the beginning of the document. The cover sheet shows the name of the printer user, the application, the document name, the date and time, and the printer name. If you click Last Page, the same information appears as the final page in the printed document.

Printing a Database Document—If you're printing a database document, the Print dialog box gives you additional options. You can print the current record or all visible records.

ImageWriter—If you plan to print labels from a database document on an ImageWriter, don't use a header part in your label layout. Also, click the No Gaps Between Pages option in the Page Setup dialog box.

Saving Your Work

When you work with ClarisWorks documents, you follow a routine of opening a new document, working on it, and storing it on a disk. Protecting your work is only one aspect of saving documents. You can save documents in different formats so that you can open them in other applications. You can also save documents as stationery to preserve certain formats.

To save ClarisWorks documents for use in other applications, you must have the appropriate translators. The following translators are available at installation:

- MacWrite 5.0, MacWrite II
- AppleWorks 2.0 (text only)

- Microsoft Word 3.0 and 4.0, Microsoft Write 1.0, Microsoft Word PC
- Microsoft Works 1.1 (text only)
- WriteNow 1.0 and 2.0, WriteNow NeXT
- Word Perfect 1.0, Word Perfect PC 4.2
- SYLK, DIF
- Text (or ASCII)
- PICT (for graphics)

For information on translators, see "More about translators," earlier in this chapter.

Saving a Document

A document resides temporarily in the computer's memory as you work. If you switch the computer off or experience a power failure, you lose the document if you haven't saved your work. To protect a document, you must save it. Try to save your work every 10 minutes.

To save a new document the first time

1. Make sure the document you want to save is active (click anywhere in the document).
2. Choose Save from the File menu (or press Command-S).

You see the Save As dialog box (figure 2-11).

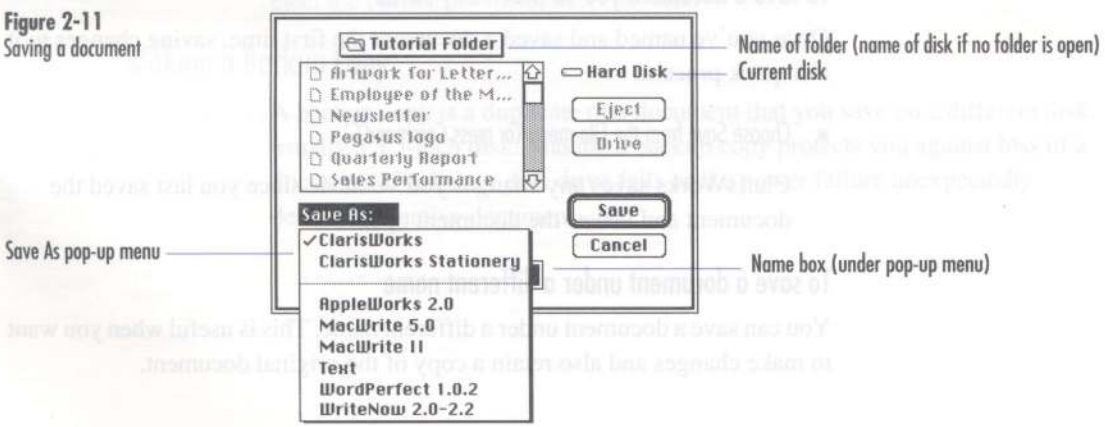


Figure 2-11
Saving a document

3. **Type a name for the new document in the Name box.**

   You don't need to delete the "Untitled 1" text; you can just start typing while the box is selected.

4. **Choose another folder or disk if you want to save the document in a different location.**

   For information on switching folders and disk drives, see your Macintosh owner's guide.

5. **To save the document as a regular ClarisWorks document, click Save.**

   The new name appears where "Untitled" was before.

6. **To save the document in a different file format, choose the file format type from the Show pop-up menu (shown in figure 2-11).**

   The document is stored, with the new name, in the folder and on the disk you specified.

More about saving documents for use in other applications

"Saving Out"—The process of saving a document in a different format is sometimes referred to as "saving out." Even if the application you want to use isn't listed in the Save As pop-up menu, you can sometimes use one of the commonly accepted formats, such as ASCII Text, DIF, or SYLK, to save the document. You can then open the document in any application that supports those formats.

To save a document you've previously saved

Once you've named and saved a document the first time, saving changes to it is a quick process.

- Choose Save from the File menu (or press Command-S).

  ClarisWorks saves any changes you've made since you last saved the document and leaves the document open.

To save a document under a different name

You can save a document under a different name. This is useful when you want to make changes and also retain a copy of the original document.

1. **Make sure the document you want to save is active (click anywhere in the document).**
2. **Choose Save As from the File menu (or press Command-Shift-S).**

   You see the Save As dialog box (figure 2-11).

3. **Type a name for the document.**

   Choose another folder or disk if you want to save the document in a different location.

4. **Click Save.**

   ClarisWorks makes a copy of the document using the new name, complete with any changes you've made since the last time you saved. The newly named document is left open on the screen. The original is retained under the previous name.

More about saving documents

Save Versus Save As—You use the Save command to update an active document on a disk with the most recent changes you've made. When you want to make a copy of a document with the changes, and you also want to keep the original document unchanged, use Save As to give the new version a different name or location.

Finding More Room—Occasionally you may receive a message that tells you there isn't enough room on the disk to hold the document you want to save. If the disk is full, you must save the document elsewhere. Switch disk drives or eject the current disk and insert another.

Making a Backup Copy

A backup copy is a duplicate of a document that you save on a different disk, usually a 3.5-inch disk. Making a backup copy protects you against loss of a document if a disk or disk drive fails or if a power failure unexpectedly destroys an active document.

To make a backup copy of a document on a 3.5-inch disk

1. **Insert the backup disk into the 3.5-inch disk drive.**

   To keep activities straight, you may want to add the initials *BU* (for *backup*) to the name of the backup disk.

2. **On the Macintosh desktop, select the document icon and drag it to the icon for the backup disk.**

   The disk icon turns dark to indicate that it's selected.

3. **Release the mouse button.**

   A message alerts you if you're about to replace a document with the same name. Click OK to replace the existing backup document, if there is one, with the current document.

To make a backup copy of a document on a hard disk

1. **On the Macintosh desktop, select the document icon and drag it to the icon for the hard disk.**

   The disk icon turns dark to indicate that it's selected.

2. **Release the mouse button.**

   A message alerts you if you're about to replace a document with the same name. Click OK to replace the existing backup document, if there is one, with the current document.

Creating a Stationery Document

If you've spent time changing the way a document looks, you may wish to save the document as ClarisWorks stationery. A stationery document retains all the formatting and contents of the original document. When you open a stationery document, you open a new, untitled document. The original remains intact so that you can use it over and over again.

If you follow the naming convention for ClarisWorks stationery documents and save your documents in the Claris folder (located in you system folder or your application folder), then every time you open a new document of that document type, ClarisWorks will use the stationery document you saved. The naming convention for stationery documents is "ClarisWorks," followed by the abbreviation for the document type, followed by the word "Prefs", which stands for preferences. The abbreviations for the document types are "WP" for word processing, "GR" for graphics, "SS" for spreadsheet, "DB" for database, and "CM" for communications. For example, the name for a word processing stationery document is "ClarisWorks WP Options" and the name for a graphics stationery document is "ClarisWorks GR Options."

To make stationery from a document

1. Choose Save As from the File menu (or press Command-Shift-S).

   You see the Save As dialog box (figure 2-12).

2. Type a new name for the document.

3. Choose another folder or disk if you want to save the stationery in a different location.

   For information on switching folders and disk drives, see your Macintosh owner's guide.

4. Choose ClarisWorks Stationery from the Save As pop-up menu.

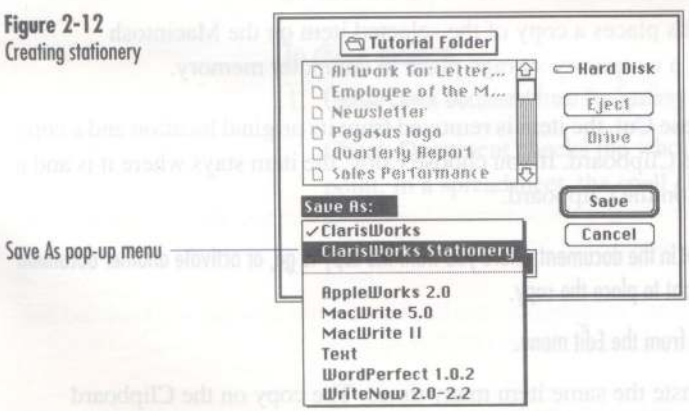


Figure 2-12
Creating stationery

5. Click Save.

   ClarisWorks makes a copy of the document as stationery.

   Later, when you open the stationery document, ClarisWorks creates a copy, names the copy *Untitled*, and leaves the original stationery intact. The untitled document is numbered according to the number of documents you've created in a session. You can rename the new document when you save it.

Editing Your Work

Revising and editing text, data, and objects is easy. To move something to another place, you select the item, cut or copy it, and paste it elsewhere—somewhere else in the same document or in another document, even one of a different type.

This section covers only the basics. You'll find more detail on specific editing methods in the chapters on text, graphics, spreadsheet, and database documents.

To cut or copy and paste text, data, or objects

1. Select a line or paragraph of text, an object, or a data entry in a database or spreadsheet document.
2. Choose Cut or Copy from the Edit menu.

   ClarisWorks places a copy of the selected item on the Macintosh Clipboard, a temporary storage place in computer memory.

   If you choose Cut, the item is removed from its original location and a copy goes on the Clipboard. If you choose Copy, the item stays where it is and a copy goes on the Clipboard.

3. Select the spot in the document where you want the copy to go, or activate another document where you want to place the copy.
4. Choose Paste from the Edit menu.

   You can paste the same item many times. The copy on the Clipboard remains the same until you cut or copy something else.

- **Keyboard Shortcuts** You can use the Macintosh keyboard to help make basic editing tasks go faster.

  To cut: Press Command-X

  To copy: Press Command-C

  To paste: Press Command-V

For more shortcuts, see the *ClarisWorks Quick Reference Guide*.

Using the Spelling Checker

You can check spelling in any ClarisWorks document except a communications document. When you check spelling, your typing is verified against a main dictionary and a user dictionary that you can set up yourself. The spelling checker has the added advantage of counting words for you.

If you need to check spelling in a communications document, you can save the document as a word processing document and check the spelling there.

Checking Spelling

To check spelling, you must first install a main dictionary, a user dictionary, or both. See "Installing a Dictionary," in the next section, for instructions. Also, you need to open a document; spelling options aren't available when all documents are closed.

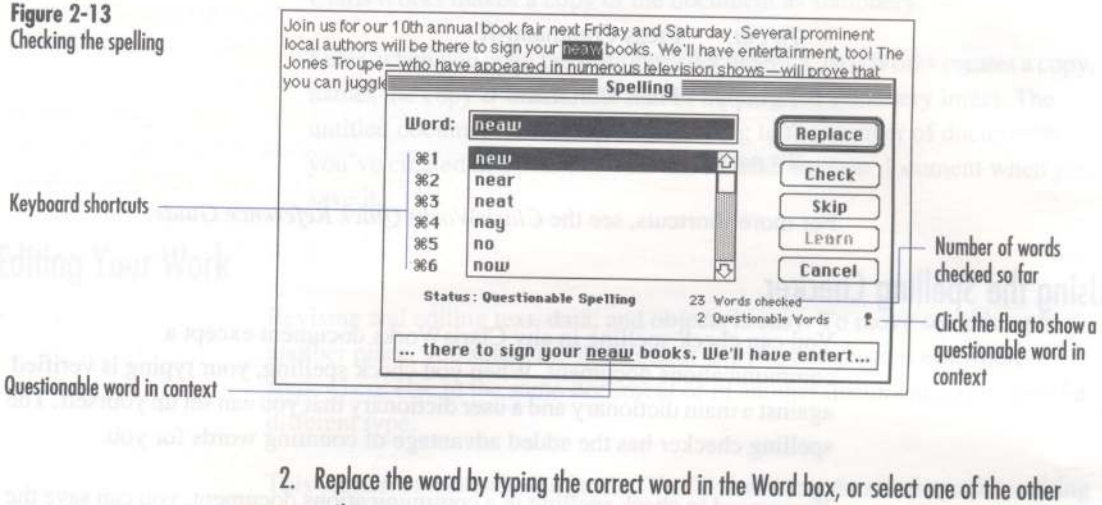
To check spelling

1. Choose Check Document from the Spelling submenu of the Edit menu.

   Check Document checks the whole document, beginning at the insertion point. In a spreadsheet, the spell check begins at the first cell.

As the spelling check starts, you see the Spelling dialog box (figure 2-13).

Figure 2-13
Checking the spelling



2. **Replace the word by typing the correct word in the Word box, or select one of the other options:**

   - To replace the word, select a word from the list of replacements and click Replace (or type the keyboard shortcut beside a suggested word and press Return).
   - To change the word yourself, edit the word in the Word box and click Check to have the spelling checker verify the new spelling. If the word is OK, click Replace.
   - To accept the word as is, click Skip. The spelling checker skips the word throughout the current spell-checking session.
   - If you've set up a user dictionary, click Learn to add the word to the dictionary.

   The spelling check continues until the end of the document is reached (or until you click Cancel).

   When the check is complete, the Replace button changes to Done and the other buttons are dimmed.

3. **Click Done to return to the document.**

Installing a Dictionary

To change dictionaries, or to install dictionaries for the first time, you must tell ClarisWorks where to find the dictionaries and which user dictionary to use. You provide this information by *installing* the dictionaries.

If you've already installed the ClarisWorks dictionary (or dictionaries from other products) in the Claris or ClarisWorks folders, you don't need to install the dictionaries again. You need to install a dictionary only when you want to change dictionaries.

To install a dictionary

1. **Choose Install Dictionaries from the Spelling submenu of the Edit menu.**

   You see the Install Dictionaries dialog box (figure 2-14).

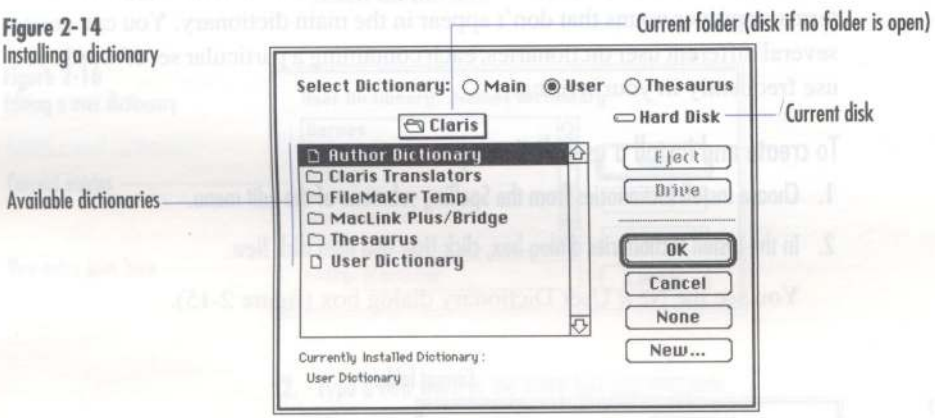


Figure 2-14
Installing a dictionary

2. **Click Main, User, or Thesaurus.**

   The list of available dictionaries changes, depending on the button you select. You may need to switch folders or disks to find the dictionary you want.

3. **Select the dictionary name.**

4. **Click OK (or double-click the dictionary name) to return to the document.**

   The dictionary is now ready to use for spelling checks.

More about dictionaries

Product Compatibility — You can install and use the ClarisWorks main dictionary (plus any user dictionaries you create in ClarisWorks) in any other Claris products that have a spelling checker. These products include the FileMaker Pro, MacDraw Pro, MacWrite II, and MacProject® II applications.

User Dictionaries —You can install only one user dictionary at a time.

Main Dictionary — You can install only one Main Dictionary at a time.

Thesaurus — You can install only one Thesaurus at a time. Using a Thesaurus is described in "Finding Synonyms," later in this chapter.

Creating a User Dictionary

You may find a user dictionary helpful if a document contains specialized terms or proper nouns that don't appear in the main dictionary. You can create several different user dictionaries, each containing a particular set of words you use frequently in your writing.

To create and install a user dictionary

1. Choose Install Dictionaries from the Spelling submenu of the Edit menu.
2. In the Install Dictionaries dialog box, click User and then click New.

   You see the New User Dictionary dialog box (figure 2-15).

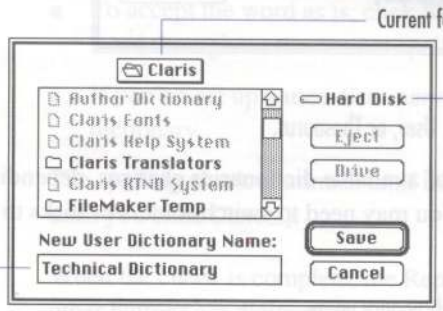


Figure 2-15
Creating a user dictionary

3. Type a name and click Save.

   The new user dictionary is now ready for you to add entries.

More about user dictionaries

Naming Dictionaries —When you name user dictionaries, give them logical names, such as "Engineering Dictionary" or "Customer Dictionary." Specific names help you recognize a dictionary later when you need to reinstall it.

Working with a User Dictionary

Once you've created and installed a user dictionary, you can keep it up to date by adding new terms, editing terms, clicking Learn in the Spelling dialog box, or removing words from the current list.

To edit a user dictionary

1. Choose User Dictionary from the Spelling submenu of the Edit menu.

   You see the User Dictionary dialog box (figure 2-16). Current entries are listed on the left.

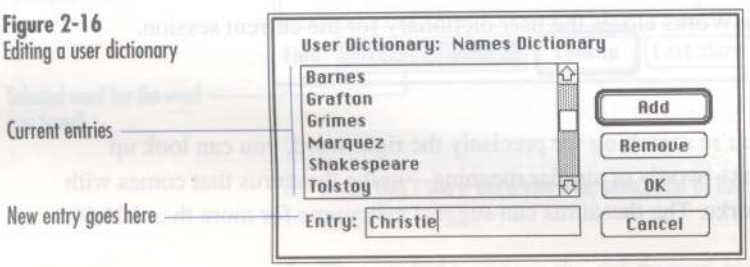


Figure 2-16
Editing a user dictionary

2. Type a new word in the Entry box and click Add.

   To change an existing word, select the word in the list, click Remove, type the revised word in the Entry box, and then click Add.

   To remove a word, select the word and click Remove.

3. If you want to store the changes you made, click OK.

4. If you decide against the changes, click Cancel.

You're asked to confirm the decision (figure 2-17).

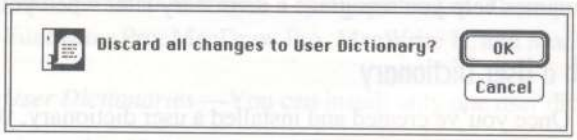


Figure 2-17
Discarding changes

5. Click Discard to leave the user dictionary as it was before you made changes.

To close a user dictionary

1. Choose Install Dictionaries from the Spelling submenu of the Edit menu.
2. In the Install Dictionaries dialog box, click User.
3. Click None.

ClarisWorks closes the user dictionary for the current session.

Finding Synonyms

When you're searching for precisely the right word, you can look up synonyms—words of similar meaning—in the thesaurus that comes with ClarisWorks. The thesaurus can suggest synonyms for more than 220,000 words.

A **thesaurus,** is "a treasury or storehouse..., a repository of words." Technically, the thesaurus is a database.

The US English thesaurus is installed when you install ClarisWorks. You can install other thesauruses in the same way as you install dictionaries. See "Installing a Dictionary," earlier in this chapter.

To look up a word

1. Select the word in your document for which you want synonyms.
2. Choose thesaurus from the Spelling submenu of the Edit menu.

   The Thesaurus dialog box opens with the word you selected in the Find box (figure 2-18) and synonyms listed above.

   If you haven't selected a word, you can type a word in the Find box and click Lookup.

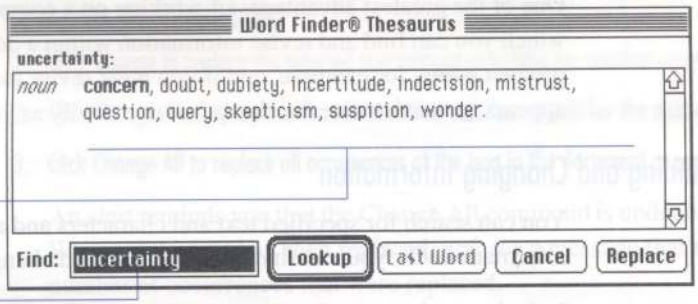


Figure 2-18
Finding words of similar meaning

Synonyms

Selected word (or the word you typed)

3. If you don't see a word you like, select one of the synonyms and click Lookup to see more words.
4. When you find a word you like, click the word, and then click Replace.

   ClarisWorks replaces the original word and closes the dialog box.

To review previous selections

1. Click Last Word.

   The window lists the words (up to ten) you've most recently looked up since opening the dialog box.

2. Select a word from the list and click Lookup to review its synonyms.

3. Click Cancel to close the dialog box when you've reviewed the synonyms or select a word and click Replace.

More about the thesaurus

How Words Are Sorted —The thesaurus sorts synonyms by parts of speech. The ∞ symbol indicates the start of a new chain of synonyms with a new or slightly different meaning. If the scroll bar is active, you can scroll to review more synonyms.

Searching for Information

One of the greatest advantages of working on a computer is the speed with which you can find and revise information within a document. If you change a product name, for example, and if you must revise the name everywhere it appears, you can make the change automatically as you search.

Finding and Changing Information

You can search for specified text and characters and automatically change the information. Or, you can find each instance and change each one individually.

To find a word or text phrase

1. Choose Find/Change from the Find/Change submenu of the Edit menu.
2. You see the Find/Change dialog box (figure 2-19).

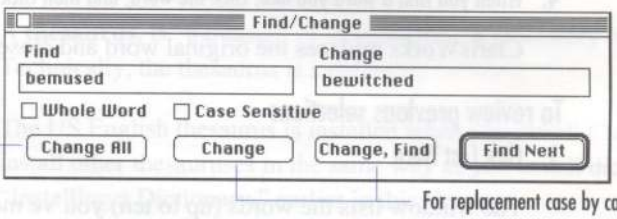


Figure 2-19
Finding and changing information

3. In the Find box, type the word or phrase you want to find.
4. If you want to replace the word or phrase, type the new text in the Change box.

5. **Click any other appropriate options.**

   Whole Word finds only the word or phrase itself and not text that contains the same characters. Case Sensitive finds words whose capitalization matches that of the Find word.

6. **Click Find Next.**

   ClarisWorks finds the specified text, selects it, and leaves the dialog box open. If you wish to replace the text, go to the next set of instructions, "To change the selected text."

To change the selected text

1. **Click Change to replace the selected text without searching for another occurrence.**
2. **Click Change, Find to replace the selected text and then search for the next occurrence.**
3. **Click Change All to replace all occurrences of the text in the document at once.**

   An alert reminds you that the Change All command is undoable. Click OK. When all the text has been replaced, you see a message that tells you the number of occurrences that were replaced.

4. **Click OK to return to the document.**

To change found text by hand

1. **Click once in the document to make it active.**
2. **Retype the text.**

   If the Find/Change dialog box is in view, you can click it to bring it to the top of the document so you can resume the search. If you cannot see the dialog box, choose Find from the Find/Change submenu of the Edit menu.

To find text that matches selected text

1. **In the document, select words or characters you want to match.**
2. **Choose Find Selection from the Edit menu.**

   ClarisWorks finds the next occurrence of the text you selected.

3. **Choose Find Again from the Edit menu.**

To close the dialog box

- Click the close box.

Finding Invisible Characters

ClarisWorks documents contain invisible characters, such as return characters, tab characters, and symbols for column breaks. You can search for these characters the same way you search for text.

To find invisible characters

1. Open the Find/Change dialog box as usual (see "Finding and Changing Information" earlier in this chapter).
2. Use table 2-1 to find the characters used to represent the invisible character.
3. Type the character's substitute in the Find box and click Find.

   ClarisWorks finds and selects the invisible character. You can delete the selected character or replace it with another invisible character by using the change buttons the same way you do with text (table 2-1).

Table 2-1
Keyboard equivalents for invisible characters

To find this	Press	You see this in the box
Return character	Command-Return	\p
Tab	Command-Tab	\t
Space	Space	empty space
Nonbreaking space	Option-Space	empty space
Column break	Command-Enter	\c
Time	\h	\h
Date	\d	\d
Back slash(\)	\\	\\

Customizing Your Documents

ClarisWorks documents are set up so that you can immediately get to work using standard options for footnote and page numbering, date format, and other factors that affect whole documents. You may not need to change any of these options, but if you do, this section shows you how.

You can change the way certain characters appear, the starting number for footnotes, the number of handles on a selected object, and the way dates appear when you insert the dates automatically. You set these and similar options in the Preferences dialog box.

To change the basic document settings

1. Choose Preferences from the Edit menu.

   You see the Preferences dialog box (figure 2-20).

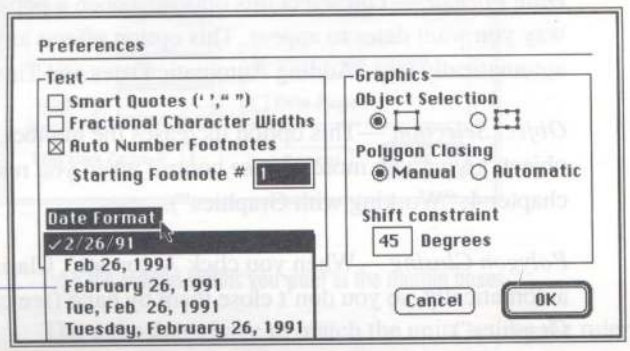


Figure 2-20
Setting preferences

2. Select or deselect any of the options (for details, see "More about preferences," following these steps).

   Preferences you change affect the open document and any objects you create within it.

3. Click OK.

   You're returned to the document.

More about preferences

Smart Quotes—This option gives you "curly" opening and closing quotation marks (“,”) and a curly apostrophe (’), instead of "straight" marks (", ').

Fractional Character Widths —This option provides finer spacing on printouts than the resolution shown on the screen. The option is preset off. Leave the option off when printing on an ImageWriter. On a LaserWriter this feature decreases the space between characters for a more professional appearance.

Auto Number Footnotes —Leave this option selected if you want ClarisWorks to number footnotes. Otherwise, deselect the option. If you want to change the starting number, leave the option selected and type the new number (see chapter 3, "Working with Text," for more information on footnotes).

Date Format —You select this option to open a pop-up menu and choose the way you want dates to appear. This option affects any dates you insert automatically (see "Adding Automatic Dates and Times," later in this chapter).

Object Selection —This option increases the number of handles on a selected object, giving you more precise control when you reshape objects (see chapter 4, "Working with Graphics").

Polygon Closing —When you click Automatic, ClarisWorks closes polygons automatically, so you don't close them by hand (see chapter 4, "Working with Graphics").

Shift Constraint —When you hold down the Shift key while drawing a line, you constrain, or limit, the line to a certain angle. You can type a custom angle here if you wish (see chapter 4, "Working with Graphics").

Working with Pages

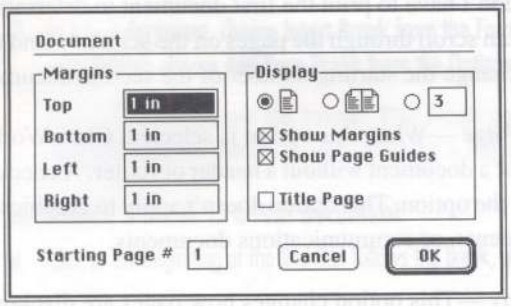
If you're using ClarisWorks documents for brochure production or writing, you may wish to view two or three pages side by side at a time so that you can get an overview of your work. Or, you may wish to change margin settings, start page numbers at a number other than 1, or create a special title page without a page number. These changes are easy to make.

To change page settings

1. **Choose Document from the Format menu.**

   You see the Document dialog box (figure 2-21). The box shows different options in a spreadsheet or graphics document. Specific settings for those environments are covered in the individual chapters.

Figure 2-21
Changing page settings



2. **Type the margin widths you want in the margin boxes.**

   The units don't have to match the units set for the rulers. ClarisWorks converts the units automatically. (See "Changing Ruler Settings" later in this chapter.)

3. **Change any other options you want to change (see "More about page settings," immediately following these steps).**

4. **Click OK to return to the document.**

5. **To reverse any changes, open the dialog box as before and reselect the options you changed.**

More about page settings

Measurement Unit Abbreviations—Use the following abbreviations when typing page margin settings: in (inches), cm (centimeters), mm (millimeters), p (picas), pt (points).

Starting Page Number —For convenience, you may occasionally divide a text project into several different ClarisWorks documents. For example, you might make each chapter in a book a separate document. When you print the different documents, instead of starting each document with page one, you can continue the page numbers from where they left off in the previous document. To change the starting page number for a document, type the new number in the box.

You don't have to print the first document to determine its final page number. You can scroll through the pages on the screen to find the last page number and then change the starting number of the second document.

Title Page —When this option is selected, ClarisWorks prints the first (title) page of a document without a header or footer. A check mark appears when you select the option. This option doesn't apply to graphics documents, spreadsheet documents, or communications documents.

Display —This option changes how pages are displayed in relation to each other on the screen. To view pages side by side, you can click "2 pages" or type a custom number of pages. You may not be able to see all the pages on the screen, but when you scroll toward the right, the additional pages come into view. This option doesn't apply to graphics documents, spreadsheet documents, or communications documents.

Show Margins —When you deselect this option, the margins no longer appear on the document. All you see is the document work area.

Show Page Guides —When you deselect this option, the dotted borders (page guides) don't appear around the document work area.

Setting a Break

In a text document or a spreadsheet, a break serves to end a page and begin another. In a text document you can also set a break to tell ClarisWorks where to end a column of text and begin another.

A breaks occurs automatically when a page is full, and you cannot remove the break. You can, however, manipulate a break by inserting one at a more convenient spot, above the spot where ClarisWorks would otherwise insert a break automatically.

To set a page or column break

1. In a text document, click at the end of the word, line, or paragraph where you want a break to occur. In a spreadsheet, click a cell above and to the left of where you want the break.

   ClarisWorks breaks the page or column after the insertion point. Additionally, in a spreadsheet, the columns to the right of the cell you clicked are cut off.

2. In a text document, choose Insert Break from the Format menu or press Enter. In a spreadsheet, choose Add Page Break from the Options menu.

   ClarisWorks makes the break. The break character is invisible. On a spreadsheet the break is indicated by a dashed line.

To remove a break in a text document

- Click at the beginning of the line that follows the break, and press Delete.

Or,

- Select the space that contains the break, and press Delete.

To remove a break in a spreadsheet

1. Click a cell immediately to the left or above the break you want to remove.
2. Choose Remove Page Break from the Options menu.

To remove all breaks in a spreadsheet

- Choose Remove All Breaks from the Options menu.

Adding a Header or Footer

You can set up a document so that ClarisWorks automatically inserts repeating elements such as headers, footers, and page numbers. You can also insert dates and times. Using these elements saves time and gives your documents a finished, professional appearance.

A **header** is a page element that appears at the top of every printed page in a document. A **footer** appears at the bottom of every page. Figure 2-22 illustrates the concept of headers and footers (they won't look exactly like this on the screen).

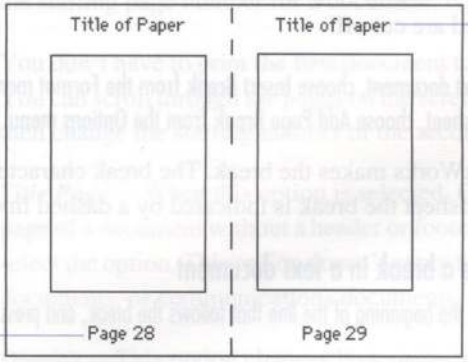


Figure 2-22
How headers and footers work

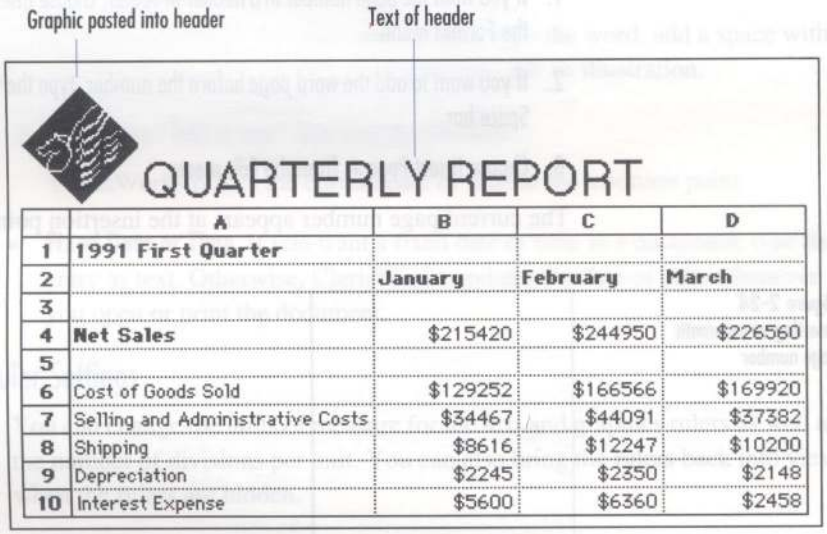
To add a header or footer

1. Choose Insert Header or Insert Footer from the Format menu.

   The insertion point moves to the top or bottom of the page. A dotted line marks the header or footer area.

2. **Type or paste the contents of the header or footer.**

The line doesn't look different from other text, but ClarisWorks recognizes the contents as a header or footer. You can paste both text and graphics in headers and footers (figure 2-23).



	A	B	C	D
1	**1991 First Quarter**			
2		**January**	**February**	**March**
3				
4	**Net Sales**	$215420	$244950	$226560
5				
6	Cost of Goods Sold	$129252	$166566	$169920
7	Selling and Administrative Costs	$34467	$44091	$37382
8	Shipping	$8616	$12247	$10200
9	Depreciation	$2245	$2350	$2148
10	Interest Expense	$5600	$6360	$2458

Figure 2-23
A header in a spreadsheet document

3. **Click anywhere else in the document or press Enter.**

The header and footer appear on each page—on the screen and when you print.

More about headers and footers

Inserting Text and Graphics —You can use the Insert command in the File menu to add text or graphics without having to copy and paste. For information, see "Inserting Whole Documents," earlier in this chapter.

Size Limits —Headers and Footers are limited to one-third of the page height.

Adding Automatic Page Numbers

You can insert automatic page numbers anywhere in a document, but they usually appear in a header or footer with an identifying line that shows the document title, date, or other information.

You can also set the starting number for text pages when you've divided a single project into multiple documents. For information on changing the starting page number, see "More about preferences," earlier in this chapter.

To add page numbers

1. If you want the page number in a header or footer, choose Insert Header or Insert Footer from the Format menu.
2. If you want to add the word *page* before the number, type the word, and add a space with the Space bar.
3. Choose Insert Page #. from the Edit menu.

The current page number appears at the insertion point (figure 2-24).

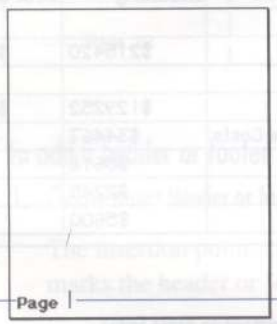


Figure 2-24
Inserting an automatic page number

You type the word *page* as regular text

The page number you insert appears after the insertion point

- **Fixed Page Number** If you want a fixed page number in a document, instead of one that is numbered automatically, type the number as text.

Adding Automatic Dates and Times

You can insert the date or time in a document and have ClarisWorks automatically update the date or time as you work. If you want to repeat a date or time on every page, you can place the date or time in a header or footer.

To insert a date or time

1. If you want the date or time in a header or footer, choose Insert Header or Insert Footer from the Format menu.
2. Click once at the spot where you want the time or date to go, either in the header or footer or in the document.

   If you want to add the word *date* or *time*, type the word, add a space with the Space bar. See "To add page numbers" for an illustration.
3. Choose Insert Date or Insert Time from the Edit menu.

   ClarisWorks places the current date or time at the insertion point.

- **Fixed Date or Time** If you want a fixed date or time in a document, type the entry as text. Otherwise, ClarisWorks updates the date or time whenever you open or print the document.

Changing Ruler Settings

You can change the units of measure for the text and graphics rulers as well as the number of divisions per unit. You can also bring the rulers back into view when the rulers are hidden.

To change ruler settings

1. Choose Rulers from the Format menu.

   You see the Ruler dialog box (figure 2-25).

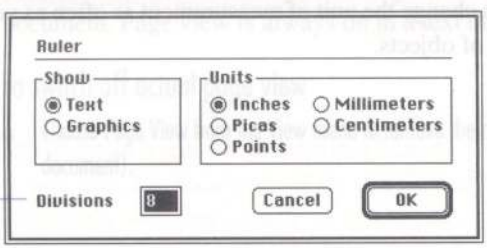


Figure 2-25
Rulers dialog box

2. **Click Text or Graphics to designate which of the rulers you want to set and show.**

   If you open the Rulers dialog box from a text document, Text is preselected. The graphics ruler is preselected in a graphics document.

3. **From the Units section, choose a unit of measure.**

4. **Type the number of divisions you want (up to 14), or leave the preset number as it is.**

   Divisions are the segments into which each unit of measure is split. For example, in a ruler set for 8 divisions per inch, a tick mark is set every 1/8 inch. The Divisions setting also determines the spacing on the autogrid. The autogrid is explained in "Using the Autogrid" in chapter 4.

5. **Click OK.**

   The ruler is reset to the new unit of measure and number of divisions.

More about rulers

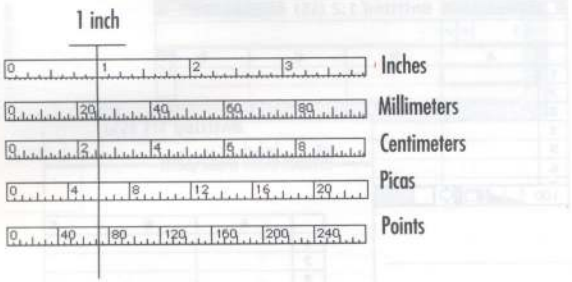
Preset Options —The preset unit of measurement is inches, with eight divisions per inch. In a database document, the number of divisions is preset at 16.

What Rulers Control —The text ruler controls the left and right margins of paragraphs, the indentation of paragraphs, text justification, tab settings, and the spacing between lines. The graphics ruler controls the automatic grid and the spacing of gridlines.

What Rulers Don't Control —Rulers have no influence on the size of objects. You can change the unit of measurement as often as you like without affecting the size of objects.

Points and Picas —Points and picas are typographic measures. There are 72 points in an inch. There are 6 picas (each 12 points) in an inch. Figure 2-26 shows relationships among different units of measure.

Figure 2-26
Ruler Relationships



Changing Your View of a Page

ClarisWorks shows pages in a document exactly as they will be printed. This view of pages is called **page view.** In Macintosh terms, a document in page view is **WYSIWYG:** What You See Is What You Get.

In page view, you see the margins that will appear on the printed page, so you can tell where right margins, left margins, and pages begin and end. You can also see headers, footers, and automatically inserted page numbers, if any.

On a small-screen Macintosh, you may wish to see more of a document's contents. You can do this by switching off the actual page view, except in a text document. Page view is always on in a text document.

To switch off actual page view

- Choose Page View from the View menu to remove the check mark (this option is dimmed in a text document).

You see the contents of the document without page margins, headers, or footers. To return to an actual view of pages, choose Page View again (figure 2-27).

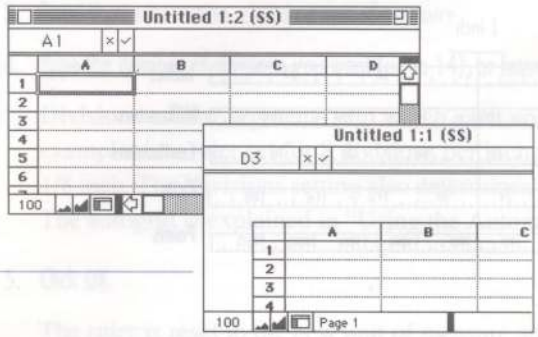


Figure 2-27
Page and actual views in a spreadsheet

Hiding or Showing Tools and Rulers

If you're working on a small-screen Macintosh, you may sometimes want to hide the ClarisWorks tool palette to make more room on the screen for the current document. Using the hide/show tools control you can quickly hide or show the tools. In a database document, you can do the same with the status panel.

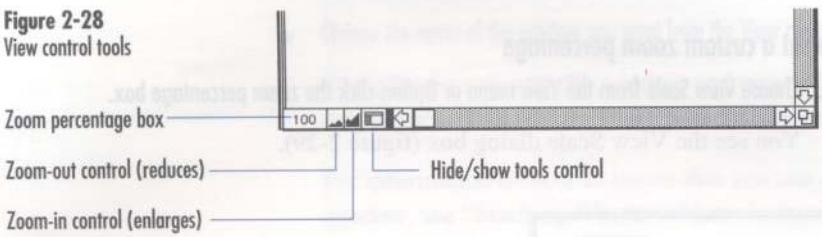
You can hide or show the rulers in any document except communications. Rulers appear by default in a new text document; no rulers appear in a new graphics document.

To hide or show tools

- Click the hide/show tools control or choose Hide Tools or Show Tools from the View menu.

ClarisWorks hides the tool palette or status panel (database). To switch back and forth, you simply click the control, showing or hiding tools as needed (figure 2-28).

Figure 2-28
View control tools



To hide or show rulers

- Choose Hide Rulers or Show Rulers from the View menu.

Zooming In and Out

Using the zoom controls, you can enlarge or reduce your view of a document.

To reduce or enlarge the view

- Click one of the zoom controls (the mountain icons)

To switch between actual size (100%) and a zoomed view

- Click the zoom percentage box.

  Clicking the zoom percentage box switches between actual size and any previous view you've set.

More about zoom controls

Reduction and Enlargement —Clicking the small mountain icon reduces, or zooms away from, the document. Clicking the larger mountain enlarges, or zooms into, the document. With an enlarged view, you can work more effectively with fine details.

Zoom Percentage Box —The zoom percentage box shows the current reduction or enlargement. Actual size is 100%.

Setting Up a Custom Zoom Percentage

You can set a custom zoom level that gives you more precise control over the view. You can then use the zoom percentage box to switch quickly back and forth between a 100% view and the custom view.

To set a custom zoom percentage

1. Choose View Scale from the View menu or Option-click the zoom percentage box.

   You see the View Scale dialog box (figure 2-29).

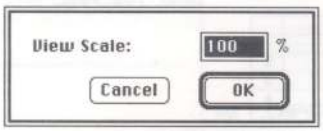


Figure 2-29
Setting up a custom zoom percentage

2. Type the percentage you want, and click OK.

   ClarisWorks reduces or enlarges the document as specified.

To return to a full view

- Click the zoom percentage box.

Working in Multiple Views

On larger projects, you may sometimes need to see different parts of a document at the same time. You can do this by opening multiple views of the same document.

Multiple views are especially useful in database documents. You can work with a document in Layout view and in Browse view and see the effects, in Browse, of any change you make in Layout.

To open a new view

- Choose New View from the View menu.

  ClarisWorks opens a new window on the document. Views are numbered consecutively from 1, in the order you create them. Each view is listed in the View menu.

To activate a view

- If you can see any part of the window, click once anywhere within the window.

  Or,

- Choose the name of the window you want from the View menu.

  ClarisWorks activates the window and moves it to the "front" position on the screen so that you can work with the document.

  For information on how to insure that you can always see a piece of each window, see "Stacking Windows" later in this chapter.

Splitting Windows into Panes

When you want to work with one section of a document while maintaining a fixed view of another section, you can split a window into panes. **Panes** are similar to the panes in a house window. Beyond a house window, you see a single landscape, segmented by the window panes. When you open multiple panes on a document, you can see different segments of the same document in each pane. This is different from opening a new view where each new view is one complete window on the document.

Using panes is particularly useful in spreadsheet documents, where you may lose sight of column titles as you work farther down in the spreadsheet. For example, you can split a window into two horizontal panes and then scroll through the data in the lower pane, leaving the column titles in place in the top pane.

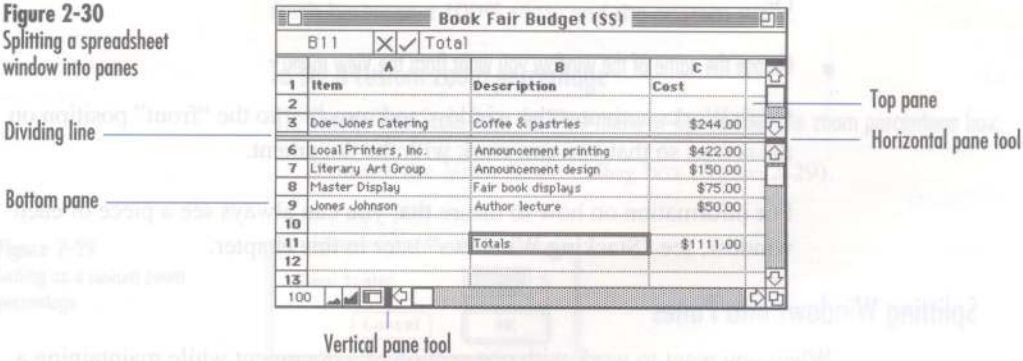
To split a window into panes

- Drag the vertical or horizontal pane tool.

  The window splits as you drag (figure 2-30).

You can use the scroll bars in the separate panes to bring the information you want into view.

Figure 2-30
Splitting a spreadsheet window into panes



To close panes

- Drag the vertical pane tool all the way to the left, or the horizontal tool all the way to the top (or drag the dividing lines).

The divisions disappear when you release the mouse button.

Tiling Windows

If you've opened multiple views of a document, or if you have several different documents open and want to see all of them at the same time, you can tile the various windows.

Tiling is an arrangement of windows that fills the screen with any open windows and makes each window the same size.

To tile windows horizontally

- Choose Tile Windows from the View menu.

The windows are arranged to fill the screen. ClarisWorks allots as much space to each window as the screen allows (figure 2-31).

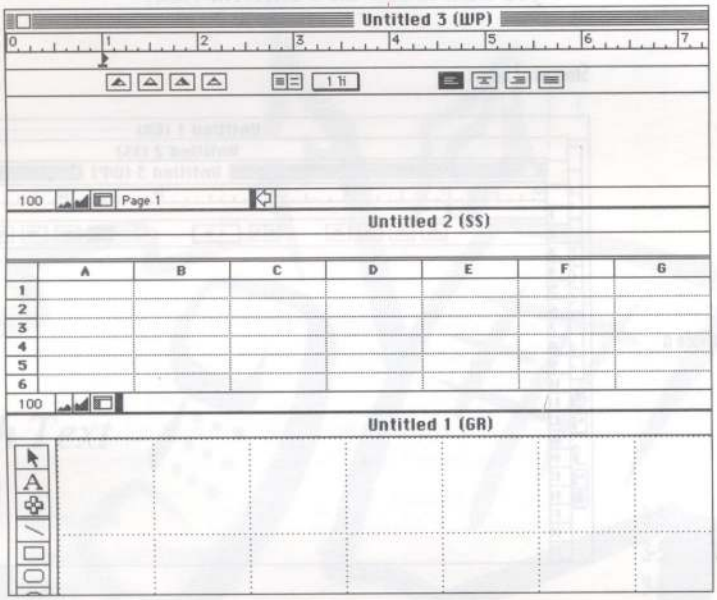


Figure 2-31
A screen full of windows tiled horizontally

To tile windows vertically

- Hold down the Option key as you choose Tile Windows from the View menu.

The windows are arranged in vertical tiles.

Stacking Windows

When you're working with multiple views, you can stack windows for easy access to each view.

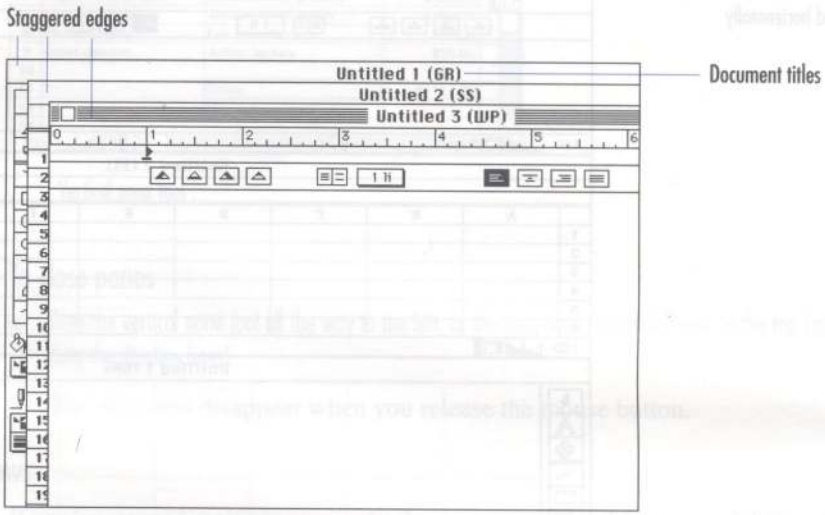
To stack windows

- Choose Stack Windows from the View menu.

The windows are arranged in a staggered group (figure 2-32).

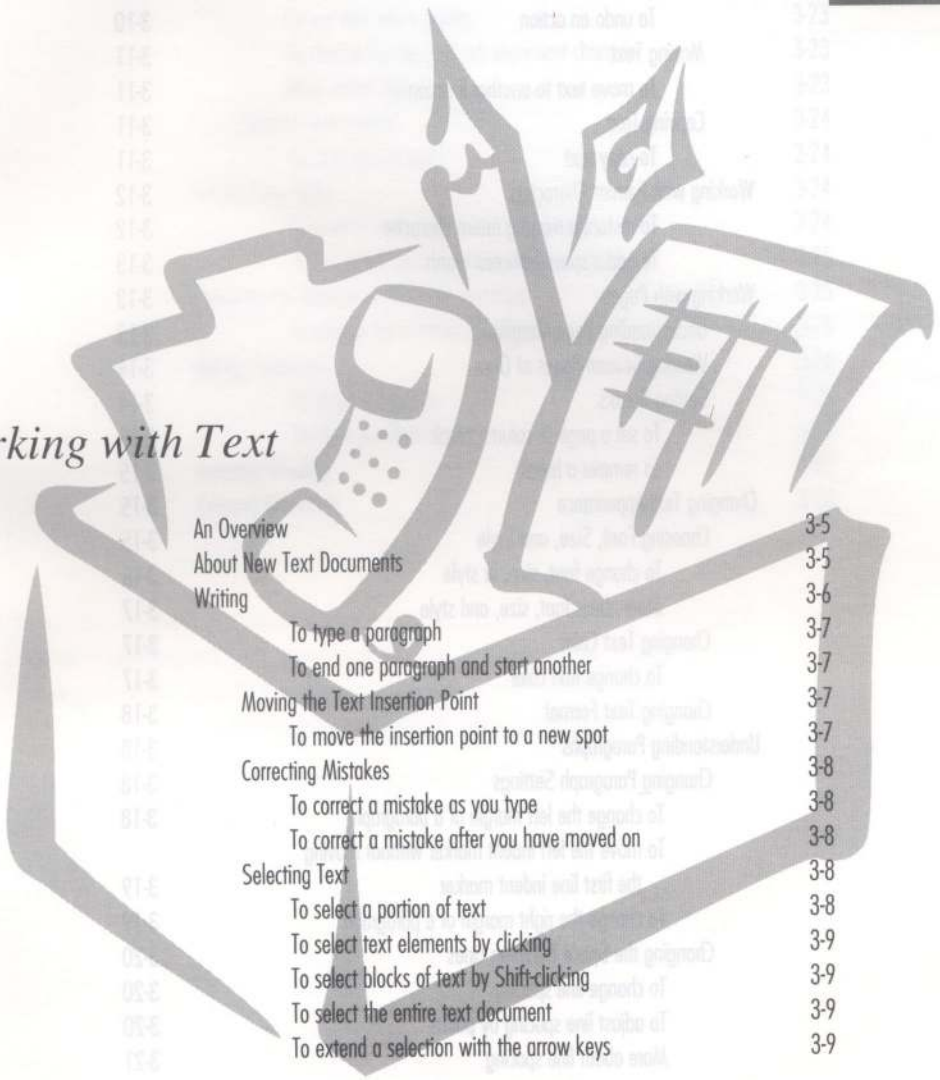
Corners are left exposed so that you can always find a corner to click when you want to activate a different view.

Figure 2-32
Stacked windows



Chapter 3

Working with Text



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Chapter 3

Working with Text

This chapter gives step-by-step instructions for working with text documents in the ClarisWorks word processing (text) environment.

The ClarisWorks text environment gives you all the features you need to produce attractive, accurate, and professional text documents—letters, academic papers, technical reports, magazine articles, book-length manuscripts, and many other text-intensive pieces.

An Overview

When you create a text document, you see the page exactly as it will look when you print it, except for screen elements such as page guides and mail merge. When you change the size or style of type, you see the effects immediately. You don't have to guess where lines will end, how many lines a paragraph will take, or where a page will end. In technical terms, a ClarisWorks text document in Page View is **WYSIWYG:** "What you see is what you get."

- **Note about Terminology** For simplicity, the terms *text* and *word processing* are used interchangeably throughout ClarisWorks publications. A text document and a word processing document are the same thing.

About New Text Documents

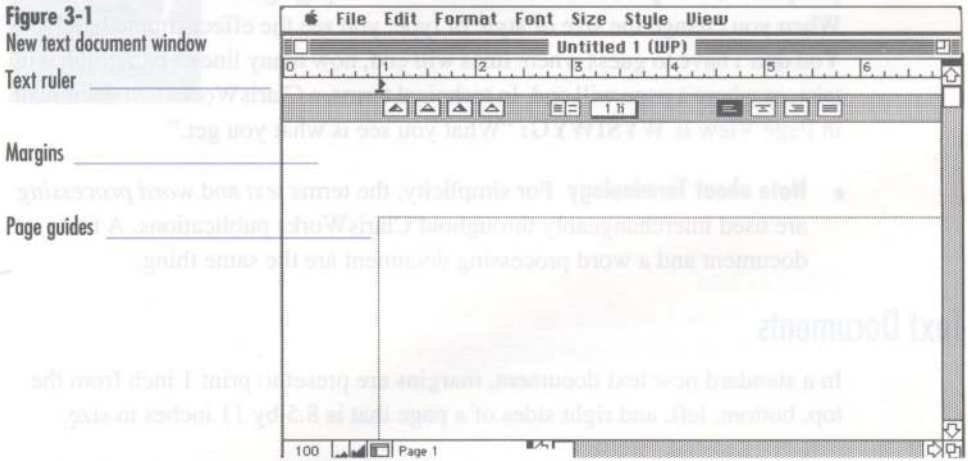
In a standard new text document, margins are preset to print 1 inch from the top, bottom, left, and right sides of a page that is 8.5 by 11 inches in size.

Line spacing is preset to single spacing, and the preset font is 12-point Helvetica. Preset alignment is Left. The ruler is set to measure in inches. Figure 3-1 shows a new text document window and menu bar.

You can change these settings at any time. See "Working With Pages," in chapter 2, and "Changing Text Format," later in this chapter.

For instructions on creating new documents, see "Creating a New Document" in chapter 2.

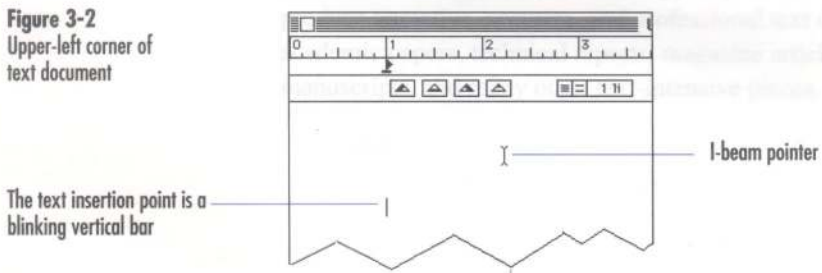
Figure 3-1
New text document window



Writing

When you create a new text document, the **text insertion point** appears as a short blinking vertical line in the upper-left corner of the document (figure 3-2). The insertion point indicates where the next text you type will appear. As you type, text appears just ahead of the insertion point.

Figure 3-2
Upper-left corner of text document



When you move the pointer within the area of a document where you can type, the pointer becomes an **I-beam**. You drag the I-beam pointer and click to move the insertion point to a different spot in text.

To type a paragraph

- Type the text you want, without pressing Return.

  As you continue to type and text reaches the right margin, you do not need to press the Return key to end a line and begin a new one. Just continue typing. When you reach the end of a line, ClarisWorks automatically moves words down to the next line in a process called **word wrap.**

To end one paragraph and start another

- Press the Return key once to end the paragraph and once more to insert a blank line.

  You can indent the first line of paragraphs (see "Changing Text Format" in this chapter). After you create a paragraph, you can insert text or delete text from the paragraph. ClarisWorks automatically adjusts the paragraph to match the current margin settings.

Moving the Text Insertion Point

To edit or insert text in different parts of a document, you reposition the text insertion point with the mouse or the arrow keys. Table 3-1 shows you how to move the insertion point using the arrow keys. The I-beam pointer moves across the document as you move the mouse.

To move the insertion point to a new spot

- Move the I-beam pointer to the desired location in the text and click.

  The insertion point blinks where you clicked in the text.

Table 3-1
Moving the insertion point with arrow keys

Press	To move
The Left or Right Arrow key	One character left or right
The Up or Down Arrow key	One line up or down
Command-Left Arrow	To the beginning of a line
Command-Right Arrow	To the end of a line
Command-Up Arrow	To the first character in the first paragraph
Command-Down Arrow	To the last character in the last paragraph
Option-Left Arrow	One word to the left
Option-Right Arrow	One word to the right
Option-Up Arrow	To the beginning of a paragraph
Option-Down Arrow	To the end of a paragraph

Hold down an arrow key to move continuously through a document.

Correcting Mistakes

When you make a typing mistake, you can easily correct it.

To correct a mistake as you type

1. Press the Delete or Backspace key.

   Each time you press Delete, the last character you typed is erased.

2. Retype to correct the error.

To correct a mistake after you have moved on

- Select the text to be changed and type the new text.

  See "Selecting Text," next.

Selecting Text

To make corrections or changes to more than a letter at a time, you must select a word or block of text. Selecting identifies the text you want to change.

To select a portion of text

- Position the I-beam pointer next to the text you want to select and drag across it.

The selected text is highlighted (figure 3-3). You can now change the text. For example, if you type, the text is deleted and what you type replaces it. Or you can choose another font from the Font menu, and the selected text changes to that font.

Figure 3-3
Selected text

To select text elements by clicking

- To select a word, double-click the word.
- To select an entire line, click three times anywhere in the line.
- To select an entire paragraph, click four times anywhere in the paragraph.

To select blocks of text by Shift-clicking

- Click to place the insertion point in front of or behind the text, hold down Shift, and click at the other end of the text you want to select.

  You can use this technique to select many paragraphs of text.

To select the entire text document

- Choose Select All from the Edit menu or press Command-A.

To extend a selection with the arrow keys

- Hold down Shift and press an arrow key to extend the selection in the direction of the arrow.

Deleting Text

You can delete unwanted text and retain a copy on the Macintosh Clipboard to paste somewhere else in a document. Or, you can erase the text completely, without retaining a copy. For information on the Clipboard, see "Editing Your Work," in chapter 2.

To remove text permanently

1. Select the text you want to delete.
2. Press Delete or choose Clear from the Edit menu.

To remove text and retain a copy for pasting elsewhere

1. Select the text you want to remove.
2. Choose Cut from the Edit menu or press Command-X.

   A copy of your selection is stored on the Macintosh Clipboard. You can now paste the copy somewhere else, as many times as you wish. See "Moving Text," later in this section.

To check the contents of the Clipboard

- Choose Show Clipboard from the Edit menu.

  The Clipboard window opens. To close the window, click the close box.

Correcting and Revising

Correcting and revising your work in ClarisWorks documents is much easier (and faster) than with a typewriter. You can move a paragraph from one spot to another without retyping. If you find that you've moved the wrong text, you can usually cancel your action.

Making Corrections

If you accidentally delete the wrong line of text, you can cancel the deletion and return the line of text to the document. The reverse is also true. If you paste something and change your mind, you can cancel the paste operation.

To undo an action

- After the mistaken action—and before you choose a command or type anywhere else in the document—choose Undo from the Edit menu.

  The original text is restored.

- If you want to go back to the original version, choose Redo from the Edit menu.

  Undo and Redo reverse only your most recent actions.

Moving Text

You can easily move a selection of text to a different location in a document.

To move text to another location

1. Select the text you want to move.
2. Choose Cut from the Edit menu.

   The selected text disappears from the screen and is temporarily placed on the Clipboard.

3. Click the location in the document where you want to insert the text.
4. Choose Paste from the Edit menu.

   The text appears in the new location (figure 3-4).

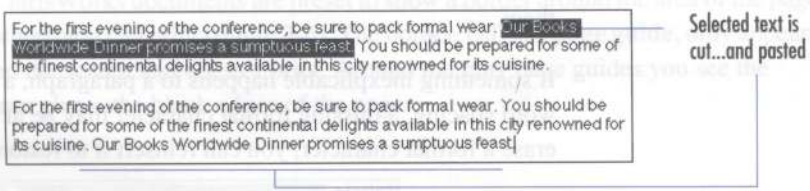


Figure 3-4
Moving text by cutting and pasting

Copying Text

You can copy selected text and place as many copies as you want in different locations in the document or in another document.

Each time you use Copy, the previous contents of the Clipboard are replaced with the new selection.

To copy text

1. Select the text you want to copy.
2. Choose Copy from the Edit menu.
3. Click the location in the document where you want to insert the text.

4. Choose Paste from the Edit menu.

   A copy of the contents of the Clipboard is placed at the insertion point. You can now paste the copy elsewhere, as many times as you wish. (See "Moving Text," earlier in this chapter.)

Working with Format Characters

Each time you press the Space bar, Tab, or Return, ClarisWorks inserts a special format character in the text document. For example, when you press Return at the end of a paragraph, ClarisWorks inserts an invisible return character (figure 3-5).

As you edit and format text, you sometimes delete or insert one of these invisible characters. For example, to make two paragraphs into one, you delete the return character that separates one paragraph from the other. ClarisWorks then joins the two paragraphs because you took out the instruction that divided them.

If something inexplicable happens to a paragraph, a block of tabbed text, or word spacing, a missing format character may be at fault. If you accidentally erase a format character, you can reinsert it to restore the proper text format.

Figure 3-5
Hidden format characters

To restore a missing return character

1. Position the insertion point where the new paragraph should begin.
2. Press Return.

   ClarisWorks divides the paragraphs by inserting a new return character.

To add a space between words

1. Place the insertion point between the two letters you want to separate.
2. Press the Space bar.

   A new space character is inserted. To remove extra spaces between words, use the Delete key to erase the space character.

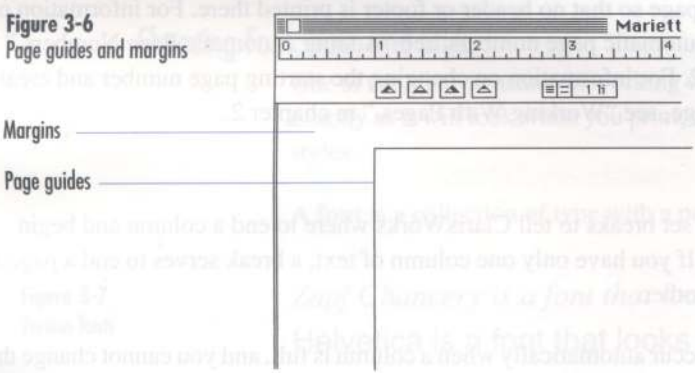
Working with Pages

Setting up and viewing your text pages is similar to working with pages in the other ClarisWorks environments. For this reason, much of the information is presented in chapter 2, "Working With Documents." Following are some suggestions on how to best use the page features in text documents.

Understanding Page Margins

ClarisWorks documents are preset to show a border around the area of the page where you can print (figure 3-6). The border, called a **page guide,** only appears on the screen and doesn't print. Around the gray page guides you see the **margins**—the blank edges of the page.

Figure 3-6
Page guides and margins



If you're working on a small-screen Macintosh, you may wish to hide the margins so that you can see more of a document. Or, you may wish to hide the page guides to see how the document will look when printed.

Showing or hiding the page guides and margins changes the way the page looks on the screen, but not the way the page is printed. For information on showing and hiding margins and page guides, see "Working With Pages," in chapter 2.

By changing the margins, you can change the printable area of the page. To change the width of a block of text, see "Changing Text Format," later in this chapter. For information on page margins, see "Working With Pages," in chapter 2.

Viewing Several Pages at Once

If you are using ClarisWorks documents for brochure production or writing, you may wish to view two or three pages next to each other as they will appear when printed. You can also use the zoom controls to get a bird's eye view of the document or enlarge the details. For information on viewing pages side by side, see "Working With Pages," in chapter 2. For information on the zoom controls, see "Changing Your View of a Page," in chapter 2.

Because of memory limitations, you may occasionally divide a big text project into several small ClarisWorks documents. When you print the different documents, you can make the page numbers sequential. You can also set up the title page so that no header or footer is printed there. For information on adding automatic page numbers, see "Adding Automatic Page Numbers," in chapter 2. For information on changing the starting page number and creating a title page, see "Working With Pages," in chapter 2.

Setting Breaks

You can set breaks to tell ClarisWorks where to end a column and begin another. If you have only one column of text, a break serves to end a page and begin another.

Breaks occur automatically when a column is full, and you cannot change these breaks. You can, however, manipulate breaks by adding one at a more convenient spot, above the spot where an automatic break is inserted.

For information on creating columns, see "Changing the Number of Columns on a Page," later in this chapter.

To set a page or column break

1. Click at the end of the word, line, or paragraph where you want a break to occur.
2. Choose Insert Break from the Format menu or press Enter.

   ClarisWorks breaks the column after the insertion point. If text is in one column, ClarisWorks inserts a page break. The break character is invisible. The text starts again at the top of the next column (or page).

To remove a break

- Click at the beginning of the line that follows the break, and press Delete.

Or,

- Select the space that contains the break, and press Delete.

Changing Text Appearance

You can type text in any font available to your Macintosh System file. Or, you can type in the preset font (Helvetica) and change the text appearance later. For instructions on font installation, see the *Macintosh Utilities User's Guide* that came with your computer.

Choosing Font, Size, and Style

One of the great pleasures of working with ClarisWorks is being able to see text exactly as it will look when you print, complete with specified fonts, sizes, and styles.

A **font** is a collection of type with a particular appearance (figure 3-7).

Zapf Chancery is a font that looks like this.

Helvetica is a font that looks like this.

Figure 3-7
Various fonts

Style refers to the way a font appears on the screen and when you print (figure 3-8)

Figure 3-8
Various styles

This line is in italic style.
This line is in bold.
This line is in bold italics.
This line is in outline.

The style options are Plain Text (the basic font), Bold, Italic, Underline, Outline, Shadow, Condense, and Extend. For technical or academic work, you can also specify superscripts and subscripts.

Size is the measure of type size in units called *points*. You may have many reasons to change type size: to create a big headline, to squeeze more text on a page, or to differentiate one paragraph from another. For example, you can type a headline in a large size, say 18 points, and then choose a 12-point font size for the paragraphs that follow (figure 3-9).

Figure 3-9
Various sizes

18-Point Type Headline

...And a 12-point story follows...

To change font, size, or style

1. Select the text you want to change, or position the insertion point and click where you want to begin typing text in the new font.
2. Choose the font you want from the Font menu, the size you want from the Size menu, and the style you want from the Style menu.

   A check mark appears on the menu in front of each new choice.

More about font, size, and style

Preset Options —A ClarisWorks text document is preset for the Helvetica font, in Plain Text style, in 12-point size. If you do not have Helvetica in your System file, ClarisWorks substitutes Geneva.

Points —Font sizes are measured in points. A point is a typographic unit of measure (about 1/72 inch).

Combining Styles —You can combine most styles to create special effects. For example, you can make selected text both bold and italic and then add an underline. The one exception is Plain Text. When plain text is selected, all other styles are automatically turned off.

Evading the "Style Police" —Design experts in most organizations warn against mixing too many styles in the same document. It's probably best to stick to one or two forms of emphasis, such as bold or italic, or one or two forms of headlines, such as outline or outline italic. A simple approach keeps the page from looking too cluttered.

Custom Font Size —To set a font size not listed on the Size menu, choose Other from the Size menu and type the size you want.

Changing Text Color

If you have a color monitor, you may find it useful to change the color of text. (You need a special printer or output device to print in color.) For those who make presentations using the Macintosh, a change in text color—using red for headlines, for example—can make a dramatic difference in the impact of the presentation.

To change text color

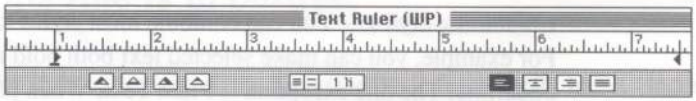
1. Select the text you want to change.
2. Choose a color from the Text Color submenu on the Style menu.

   The submenu is actually a palette that shows the colors available on your system. On a monochrome monitor, the colors are listed by name.

Changing Text Format

The text ruler at the top of the page (figure 3-10) gives you numerous options for the way you format text. (If you don't see it, choose Show Rulers from the View menu.) You can change vertical line spacing, set paragraph margins and first-line indentation, set tabs, and change the way text lines up relative to the left and right margins.

Figure 3-10
Text ruler



Understanding Paragraphs

Ruler settings control the format of your text, paragraph by paragraph. You select a paragraph—or several paragraphs—and change the format by adjusting the ruler. You can copy the ruler settings from one paragraph and apply those settings to another selected paragraph.

The ruler always shows the settings for the current paragraph. A paragraph is current when the text insertion point is blinking anywhere in the paragraph or the paragraph is highlighted. Any changes you make to the ruler affect the current paragraph (or paragraphs).

Changing Paragraph Settings

You can quickly adjust the right and left margins using the text ruler. If you want to indent a quotation, for example, you can select the quotation and change the ruler settings just for that one paragraph.

To change the left margin of a paragraph

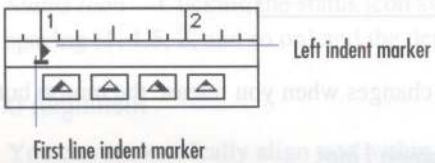
1. If the text ruler isn't visible, choose Show Rulers from the View menu.
2. Select any part of the paragraphs you want to change.

   To change the whole document, choose Select All from the Edit menu. To change one paragraph, click it so it contains the insertion point.

3. **Drag the left indent marker to the right to indent the entire left margin.**

   Both the left indent and first line indent markers move (figure 3-11). The text changes format as soon as you release the mouse button.

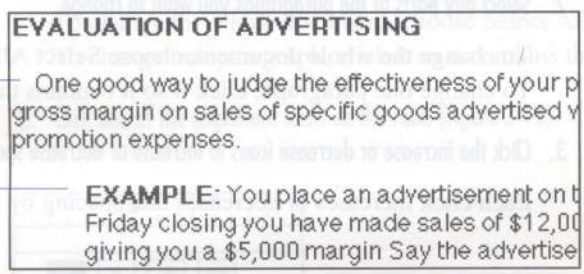
Figure 3-11
Changing the left margin



4. **To create a first-line indentation for selected paragraphs, drag the first line indent marker to the right.**

   The text changes when you release the mouse button (figure 3-12).

Figure 3-12
Different ruler settings



To move the left indent marker without moving the first line indent marker

- Hold down the Option key and drag the left indent marker either left or right.

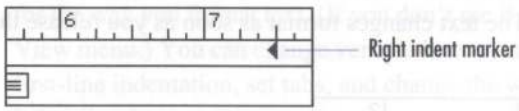
To change the right margin of a paragraph

1. **Select any part of the paragraphs you want to change.**

   To change the whole document, choose Select All from the Edit menu. To change one paragraph, click it so it contains the insertion point.

2. Drag the right indent marker to the right or left (figure 3-13).

Figure 3-13
Changing the right margin



The text changes when you release the mouse button.

Changing the Space Between Lines

ClarisWorks text documents are preset for single-space lines. You can increase or decrease the line spacing.

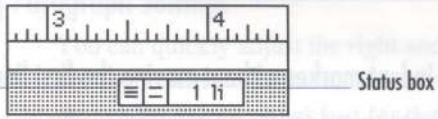
To change line spacing

1. If the text ruler isn't visible, choose Show Rulers from the View menu.
2. Select any parts of the paragraphs you want to change.

   To change the whole document, choose Select All from the Edit menu. To change one paragraph, click it so it contains the insertion point.
3. Click the increase or decrease icons to increase or decrease space between lines.

   Each click increases or decreases line spacing by a half line (figure 3-14).

Figure 3-14
Changing line spacing



The status box on the right of the icons shows the current line spacing.

To adjust line spacing by points

1. Click the status box.

   The line spacing is now expressed in points. For example, 1.5 li may become 24 pt.

2. **Click the increase or decrease icons to increase or decrease space between lines.**

   Each click increases or decreases line spacing by one point.

More about line spacing

Status Icon —Clicking the status icon switches between a measure of line spacing (1, 1.5, 2, and so on) and the depth of line spacing in points.

Changing Text Alignment

You can automatically align text within a paragraph in several different ways. For example, you can line up text with the left margin, center text within the set margins, line up text with the right margin, or align text with both margins.

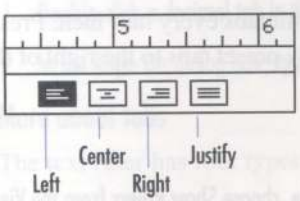
To align text

1. **Select any part of the paragraphs you want to change.**

   To change the whole document, choose Select All from the Edit menu. To change one paragraph, click it so it contains the insertion point.

2. **Click one of the alignment icons on the ruler (figure 3-15).**

Figure 3-15
Changing text alignment



Text alignment icons

   The selected paragraphs change when you release the mouse button.

More about text alignment

Left —aligns text on the left margin. The right margin is ragged (uneven). Typographers express this style of alignment as "flush left, ragged right."

Right —aligns text along the right side only. The left margin is ragged (uneven). Typographers express this style of alignment as "flush right, ragged left."

Center —adjusts all text along a line running down the center of the margin settings. Headlines are often centered.

Justify—aligns text evenly along the left and right margins. Many books are typeset using this style of alignment.

If you are new to word processing, an example (figure 3-16) may help to clarify the alignment options.

Figure 3-16
Text alignment

Setting Tabs

You can easily create a table or columns of tabular information by using tabs. The text ruler is preset with tabs every half inch. Preset tabs don't show on the ruler. If you add tabs, only preset tabs to the right of them will still be placed at half-inch intervals.

To set a tab

1. If the text ruler isn't visible, choose Show Rulers from the View menu.

2. Drag the icon for the type of tab you want (left, center, right, or decimal) to the desired position on the Ruler (figure 3-17).

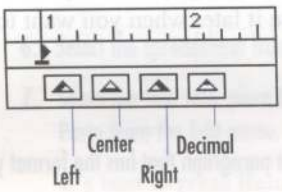


Figure 3-17
Setting tabs

The tab marker appears in the ruler. If you need to change a tab marker's position, drag it to a new position on the ruler. See "More about tabs" for a description of the different markers.

To remove a tab marker

- Drag the tab marker off the ruler.

To use tabs when typing

- Press the Tab key to move the insertion point to the next tab.

To change the decimal tab alignment character

1. Double-click a decimal tab in the ruler.
2. In the Align On dialog box, type the character by which you want to align and click OK.

More about tabs

The text ruler has four types of tabs (figure 3-17).

- *Left* —(standard) tabs align the left end of text on the tab position.
- *Center* —tabs center text on the tab position. A center tab is useful when you are typing titles or headlines.
- *Right* —tabs align the right end of text on the tab position.
- *Decimal* —tabs align text on a decimal character (usually a period). This is useful when you are typing columns of figures.

Copying Text Format

You can copy a ruler used to determine the format for a paragraph and apply it to another paragraph. For example, if you set up a ruler to create indented columns of text, you can use it later when you want to create more indented columns of text.

To copy text format

1. Place the insertion point in the paragraph that has the format you want to copy.
2. Choose Copy Ruler from the Format menu.
3. Place the insertion point in existing text you want to change or in a new paragraph.
4. Choose Apply Ruler from the Format menu.

Setting Up a Table

Setting up a table in a text document is easy—you can use a spreadsheet frame. Of course, you can also use tabs to set up a table of columnar information, but using a spreadsheet frame gives you much more flexibility.

You may want to read "Working with Frames," in chapter 7, to gain a basic understanding of how frames work.

To insert a spreadsheet frame as a table

1. If the tool palette isn't showing, choose Show Tools from the View menu.
2. Select the spreadsheet tool and drag to create the frame.

   For more information, see "Drawing Objects," in chapter 4.
3. Adjust the column width and row height.

   See "Changing the Size of Columns and Rows," in chapter 5.
4. Select the graphics tool, choose Modify Frame from the Options menu, and make your changes.

   You can remove the row headers, column headers, and grid lines. For more information, see "Changing the Appearance of a Spreadsheet," in chapter 5.

5. Select the spreadsheet, click in a cell tool and type the information you want in the table as if you were entering data in a spreadsheet.

   See "Entering Data," in chapter 5.

6. Select the spreadsheet frame and choose Cut from the Edit menu.
7. Select the text tool, place the insertion point where you want the spreadsheet, and choose Paste from the Edit menu.

   It's best to press Return to start a new paragraph before pasting the frame. Press Return after pasting the frame to bring the insertion point to a new line.

8. Use the text alignment and indent markers on the ruler to position the table.
9. To continue text after the table, click to position the insertion point, and begin typing.

To add more columns or rows to your table

See "Inserting and Deleting Cells, Rows, and Columns," in chapter 5.

Changing the Number of Columns on a Page

You can have several columns of text on a page. Columns are useful for creating newsletters or printing lists.

To change the number of columns

1. Choose Columns from the Format menu.

   You see the Column Info dialog box (figure 3-18)

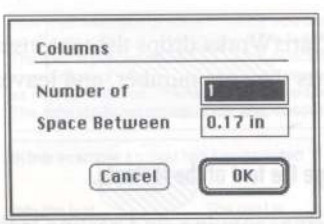


Figure 3-18
Changing the number of columns

2. **Type the number of columns you want (from one to nine).**
3. **Specify the space you want to leave between columns.**

   The units are those specified for the text ruler. The preset spacing is 0.17 inches.

4. **Click OK.**

   The entire document is rearranged into the columns you specified.

Adding Footnotes

Anyone who has spent hours measuring off text lines to determine where a footnote should begin will appreciate the automatic footnoting possible with ClarisWorks text documents. ClarisWorks computes the exact spot where text should end and footnotes begin and automatically numbers the notes.

When you delete or add a footnote, remaining notes are automatically renumbered and the page rearranged.

To insert a footnote

1. **Click at the end of the word where you want the footnote number to appear.**

   Editorial convention suggests that you place the number after the punctuation if the number falls at the end of a sentence.

2. **Choose Insert Footnote from the Format menu.**

   For the first note, the number 1 appears in superscript above the point of insertion. Subsequent notes are numbered in sequence.

   At the same time, ClarisWorks drops the text insertion point into the footnote panel, inserts the note number, and leaves the insertion point blinking.

3. **In the footnote panel, type the text of the footnote.**

   All the editing, revising, copying, and pasting techniques you use in ordinary text apply in the footnote panel.

4. When you have finished the note, click anywhere in the text document (or press Enter) to resume work on the main document.

To remove a footnote

1. In the text, select the reference number of the footnote you want to remove.
2. Press Delete (or choose Cut from the File menu).

ClarisWorks removes the note, rearranges the page, and renumbers any remaining notes, both in the text and in the footnote panel.

For information on creating custom footnotes see, "Customizing Your Documents", in chapter 2.

Inserting Graphics

Graphic objects, which include frames and pictures, can be used in a text document in two different ways. One method is to draw a graphic on your text, drag it into place, and use it as background. Or, if it's opaque and on top of the text, the graphic can be used to obscure the text.

With the second method, you paste the graphic object into the text at the insertion point (figure 3-19). It is then treated as a text character and can be moved, aligned, and so on as you would any text. This is the method used to insert a spreadsheet frame, described in "Setting Up a Table," earlier.

For information on creating and working with graphic objects, see chapter 4 "Working with Graphics." For information on frames, see chapter 7, "Using Advanced Features."

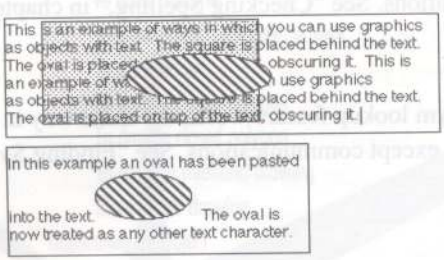


Figure 3-19
Placing graphics in a text document

Covered Elsewhere

The various ClarisWorks document types share common techniques and features, many of which are important to your work with text documents.

Changing Page Margins

For information on changing, showing, and hiding page margins, see "Working With Pages," in chapter 2.

Changing Ruler Settings

You can change the units of measure used in the text ruler. For information, see "Changing Ruler Settings," in chapter 2.

Adding Automatic Elements

You can automatically insert page numbers, the current date and time, headers, and footers. These elements work the same way in all ClarisWorks documents. See "Adding Automatic Page Numbers" and "Adding Automatic Dates and Times" in chapter 2.

Searching for Text

You can search text for expressions you need to find and make replacements by hand or automatically. The search method is the same for all ClarisWorks documents. See "Searching for Information," in chapter 2.

Checking Spelling

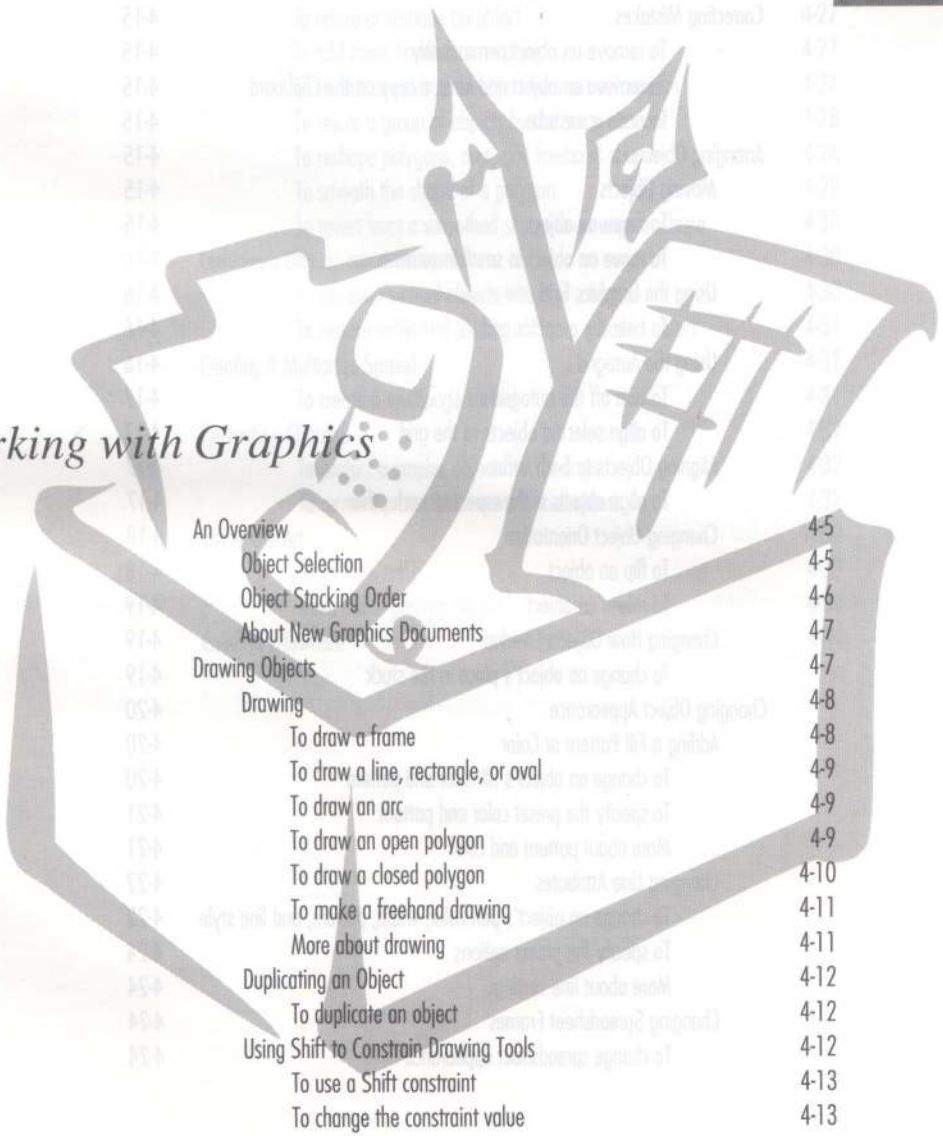
The spelling checker works the same way in all ClarisWorks documents except communications. See "Checking Spelling," in chapter 2.

Looking Up Synonyms

The synonym lookup feature works the same way in all ClarisWorks documents except communications. See "Finding Synonyms," in chapter 2.

Chapter 4

Working with Graphics



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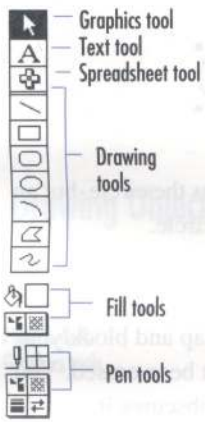
Chapter 4

Working with Graphics

This chapter gives step-by-step instructions for using graphics documents and working in the ClarisWorks graphics environment.

An Overview

A ClarisWorks graphics document is an electronic drawing pad you can use to create pictures of your own or to paste graphic images from other compatible sources.



Tool palette

Graphic Tools

The tools you use to create drawings are grouped together in the **tool palette.** To draw an object, you select the drawing tool for the shape you want and then drag to create the object.

The palette includes tools for changing the color, pattern, and line widths in your drawings. For more information on the drawing tools, see "Drawing," later in this chapter.

Graphic Objects

In a graphics document, each drawing you create is an **object**—an element that you can select by itself, resize, and move around within a document. When you draw a rectangle, for example, ClarisWorks treats the rectangle as a whole—an object—and not as four separate lines.

Object Selection

Graphic objects must be selected before you can work with them. The elephant in figure 4-1 is a graphic object selected in a ClarisWorks graphics document. The four large black dots, the object's **handles,** indicate that the elephant drawing is selected. These handles are used for resizing objects, as described in "Resizing and Reshaping Objects," later in this chapter.

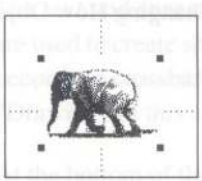


Figure 4-1
Selected object

Usually you select objects by clicking them once. Other methods for selecting objects are described in "Selecting Objects," later in this chapter.

A selected object is surrounded by an invisible rectangle that encloses the entire object (figure 4-2).

Figure 4-2
Object boundaries and handles

When you draw a circle, for example, a circular outline forms the circle, but an invisible rectangular boundary, with handles, encloses the circle.

Object Stacking Order

As you create objects, you discover that some objects overlap and block your view of other objects (figure 4-3). The blocked object hasn't been erased. You never lose part (or all) of an object because another object obscures it.

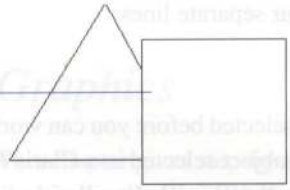


Figure 4-3
Stacked objects

ClarisWorks stacks objects in the order of creation, with the most recent object on top, in an arrangement called the **stacking order.** Methods for changing the stacking order are described in "Changing How Objects Overlap," later in this chapter.

About New Graphics Documents

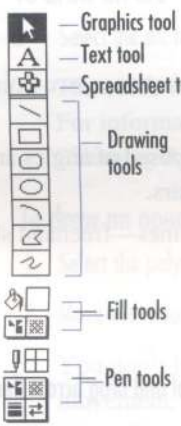
In a graphics document, margins are preset to the smallest margin allowed by the printer you've chosen. The graphics rulers are preset to inches. For instructions on changing the margins and the ruler settings, see "Working with Pages," in chapter 2.

For instructions on creating new documents, see "Creating a New Document" in chapter 2.

Drawing Objects

You use the **graphics tool** to select, move and resize objects (figure 4-4).

Figure 4-4
Graphics tools



The **text** and **spreadsheet tools** are used to create frames. The drawing tools are used to create shapes.When you select one of the drawing tools, the pointer becomes a crossbar to aid you in matching up corners or ends of lines. See "Drawing" in this chapter for instructions on working with the shape tools.

At the bottom of the tool palette are the **fill** and **pen tools,** represented by a paint bucket for object fill and a pen for line work. See "Changing Object Appearance," later in this chapter, for instructions on using these tools.

Drawing

The drawing tools work like this:

Draws a text frame or edits existing text.

Draws a spreadsheet frame or edits an existing spreadsheet.

Draws straight lines.

Draws rectangles and squares.

Draws rectangles and squares with rounded corners.

Draws ovals and circles.

Produces an arc that curves between two points.

Creates shapes that are composed of angles and straight lines, such as triangles, rhomboids, and stars.

Draws curving or irregular lines—freehand shapes like those you draw with a pen or pencil.

To draw a frame

1. Select the text tool or the spreadsheet tool and drag across the graphics document.
2. Release the mouse button when the frame is the size you want.

Frames aren't selected after you draw them, but are ready for you to type or enter data. Frames are objects, however, and the sections of this chapter on working with objects apply also to frames. For information on working *within* the frames you create, see "Working With Frames," in chapter 7.

To draw a line, rectangle, or oval

1. Select the tool for the shape you want and drag across the graphics document.
2. Release the mouse button when the object is the size you want (figure 4-5).

Figure 4-5
New selected object

- **Handles Indicate Selection** As soon as you release the mouse button after drawing an object, ClarisWorks selects the new object and adds selection handles. You can move the selected object by dragging the whole object or change its size by dragging one of the handles.

To draw an arc

- Select the arc tool and drag from one point in the graphics document to another.

The curve of an arc is determined by the direction in which you drag. For information on creating arcs you can't create with the tool alone, see "Shaping Arcs," later in this chapter.

To draw an open polygon

1. Select the polygon tool and click once where you want the shape to begin.
2. Move the mouse in the direction you want and click to end the first line.

   You don't have to hold down the mouse button. A line follows your movement.
3. Continue moving the mouse and clicking to create the angular shape you want.
4. Double-click to finish the shape.

   The polygon closes, automatically.

To draw a closed polygon

1. Choose Preferences from the Edit menu.

   The Preferences dialog box opens.

2. Click Automatic under Polygon Closing and click OK (figure 4-6).

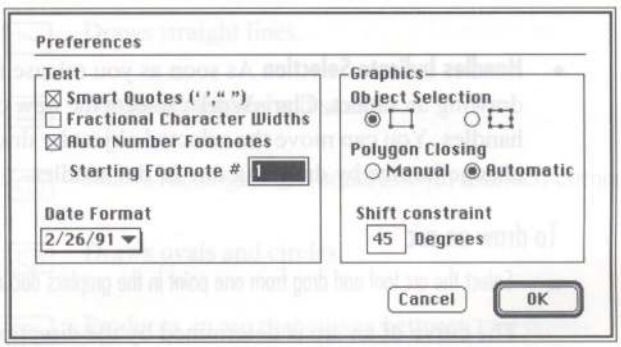


Figure 4-6
Setting graphics preferences

3. Select the polygon tool and click once where you want the shape to begin.
4. Move the mouse in the direction you want.

   You don't have to hold down the mouse button. A line follows your movement.

5. To end the first line, click again.

   Another line begins at that point.

6. Continue moving the mouse and clicking to create the angular shape you want.

   There is no practical limit to the number of lines you can add.

7. Double-click to automatically close the polygon, or click on the starting point to finish the shape.

To make a freehand drawing

- Select the freehand tool and drag to draw the shape you want.

  You can make a freehand line any length. When you release the mouse button, ClarisWorks smooths the shape and places handles at the corners of the rectangular boundary that surrounds the line. You can move the freehand shape by dragging the whole shape or change its size by dragging one of the handles.

More about drawing

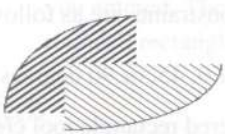
Preset Options —ClarisWorks tools are preset to draw solid black lines with a 1-point pen size, in black, with white fill pattern. Rounded rectangles are based on a circle with a radius of 1/4 inch. See "Changing Line Attributes," later in this chapter, for information on changing pen size and color. See "Changing Object Appearance" for more on changing fill color and pattern.

Locking Tools —If you plan to use the same tool to draw several objects, double-click the tool to select it. The tool remains selected until you select another tool.

Altering Curves on Rounded Corners —You can fine-tune the curve on the corners of a rounded rectangle by adjusting the radius. For information, see "Adjusting Corners," later in this chapter.

Filling an Arc —You can fill an arc with a pattern and/or color (figure 4-7). The fill is based on the concave shape of the arc. Filling arcs with patterns is a quick way to create wedge shapes like those used in pie charts. See "Changing Object Appearance," later in this chapter.

Figure 4-7
Arcs with fill pattern



Filling a Freehand Shape —You can fill a freehand shape by selecting the object and choosing a fill pattern and/or color (figure 4-8). The enclosed parts of the shape are filled. See "Changing Object Appearance," later in this chapter.

Figure 4-8
Freehand shape with fill pattern

Reshaping Polygons and Freehand Objects —You can reshape, smooth, and unsmooth an existing polygon or freehand shape. See "Resizing and Reshaping Objects," later in this chapter.

Duplicating an Object

It's easy to create several identical objects.

To duplicate an object

1. Select the object you want to duplicate.
2. Choose Duplicate from the Edit menu or press Command-D while the object is still selected.

   A copy of the object appears, slightly offset from the original. Choose Duplicate until you have the number of objects needed.

Using Shift to Constrain Drawing Tools

By holding down Shift as you draw, you can constrain (limit) a line to certain angles or an object to certain proportions (figures 4-9 and 4-10). You can change the preset value, which is 45 degrees.

The effects of the preset Shift constraints are as follows:

- The line tool creates a line of 0, 45, or 90 degrees.
- The rectangle or round cornered rectangle tool creates a square or round-cornered square.

- The arc tool creates a quarter circle.

Figure 4-9
Constraining rectangles to squares

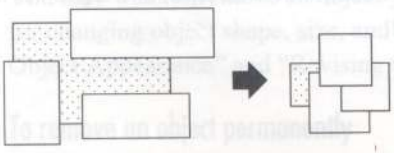
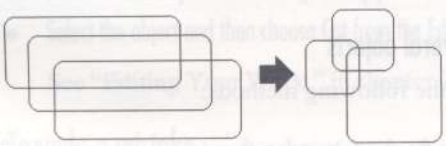


Figure 4-10
Constraining rounded rectangles to rounded squares



To use a Shift constraint

1. Select the drawing tool you want to use.
2. Hold down Shift as you drag.

To change the constraint value

1. Choose Preferences from the Edit menu.

   You see the Preferences dialog box.

2. Enter a new value in the Degrees box.
3. Click OK.

   Using Shift now constrains lines to angles that are multiples of the value you entered. The angle between the base and diagonal of rectangles and rounded rectangles is also constrained to multiples of the value.

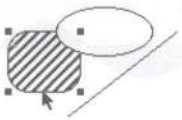
Selecting Objects

Before you can reposition any object, you must select it. You also select an object to change its appearance, as described in "Changing Object Appearance," later in this chapter.

To select an object

- With the pointer, click anywhere in the object, or for objects with transparent fill, click on an object line (figure 4-11).

Figure 4-11
Selecting an object



To select several objects

Use any of the following methods:

- Drag across the objects to enclose them in a selection rectangle (figure 4-12).

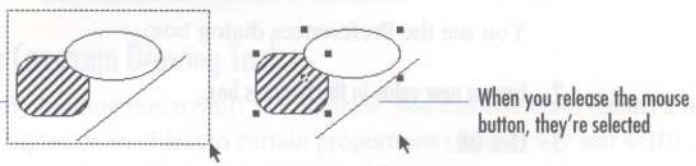
  Only objects entirely enclosed within the rectangle are selected.

- Hold down Command and drag across the objects to enclose them in a selection rectangle.

  Any object, whether partially or entirely within the rectangle, is selected.

- Hold down Shift and click each object.

Figure 4-12
Selecting several objects



To select all objects in the document

- Choose Select All from the Edit menu.

To select all objects of a certain type

1. Select the tool that created the type of objects you want to select.
2. Choose Select All from the Edit menu.

To deselect an object

- Click anywhere outside the object.

Correcting Mistakes

You may want to remove an object you don't like or undo a change. Methods for changing object shape, size, and appearance are described in "Changing Object Appearance" and "Revising Object Shapes," later in this chapter.

To remove an object permanently

- Select the object and then press Delete or choose Clear from the Edit menu.

To remove an object and keep a copy on the Clipboard

- Select the object and then choose Cut from the Edit menu or press Command-X.

  See "Editing Your Work," in chapter 2, for an explanation of the Clipboard.

To undo a mistake

- Choose Undo from the Edit menu or press Command-Z before you do anything else.

Arranging Objects

You can use several methods to arrange the objects you draw. The graphics ruler, grid, and autogrid aid in precise positioning, as does the Align Objects command. Several menu commands change the stack order of objects and object orientation.

- **Setting the Ruler** Choose Rulers from the Format menu to set the measurement units and number of divisions on the graphics ruler. These settings also control the grid and autogrid, which are described in this section. See "Changing Ruler Settings," in chapter 2.

Moving Objects

Any object, including frames, can be moved. If several objects are selected, they move together.

To move an object

- Select the object and, using the pointer, drag it to the new position.

  As you drag, a dotted rectangle follows the pointer. When you release the mouse button, the object moves to the place indicated by the rectangle. If the autogrid is turned on, the distance the object moves is constrained to the grid (see "Using the Autogrid," later in this chapter).

To move an object in small increments

- Select the object and press one of the arrow keys.

The object moves one pixel in the direction of the arrow if the autogrid is off and one grid unit in the direction of the arrow if the autogrid is on.

Using the Graphics Grid

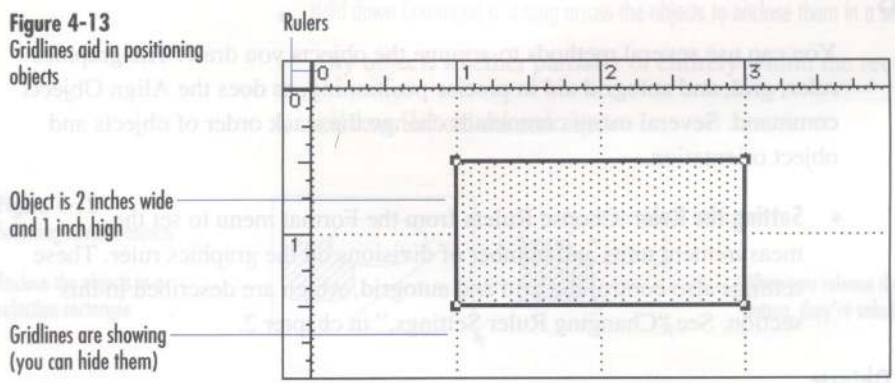
Use the graphics grid as an aid in positioning objects or to create objects in precise sizes (figure 4-13). Spacing of gridlines corresponds to the units of measure you set for the ruler. Graphics documents are preset to show gridlines.

To hide the graphics grid

- Choose Hide Graphics Grid from the Options menu.

This command switches between show and hide. To show gridlines once more, choose Show Graphics Grid.

Figure 4-13
Gridlines aid in positioning objects



Using the Autogrid

The autogrid is a hidden control device that helps you create objects of precise sizes and keep them lined up on the page. The autogrid is preset to be active.

For freehand work, you may wish to turn the autogrid off so that you have more freedom in placing objects.

The autogrid is set to the unit of measure you choose for the graphics rulers. The dots in the grid lines are spaced according to the divisions you set for the rulers, although you don't see the lines. Try changing the number of divisions on your ruler using Rulers in the Format menu. You can see how this affects object placement when you drag them and the autogrid is on.

To turn off the autogrid

- Choose Turn Autogrid Off from the Options menu.

  This command switches between on and off. To switch the autogrid back on, choose Turn Autogrid On.

To align selected objects to the grid

1. Select the objects you want to align.
2. Choose Align to Grid from the Arrange menu.

   The selected objects are adjusted so that they line up along the nearest autogrid lines.

Aligning Objects to Each Other

The Alignment command in the Arrange menu allows you to arrange objects in relation to each other.

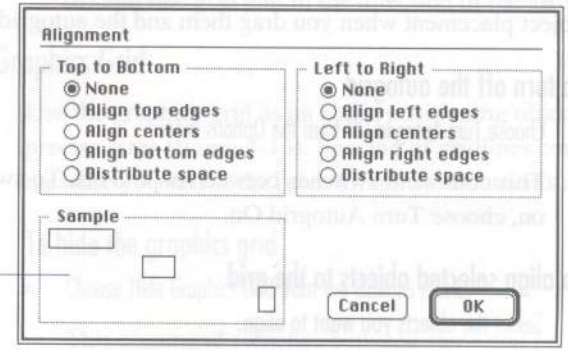
To align objects with respect to each other

1. Select the objects you want to align.

2. **Choose Align Objects from the Arrange menu.**

   You see the Alignment dialog box (figure 4-14).

Figure 4-14
Align Objects dialog box



3. **Click a Top to Bottom and a Left to Right option (select None to leave the objects as they are).**

   The sample box shows how objects will align. You can experiment as much as you like; nothing changes until you click OK.

4. **Click OK.**

   The selected objects are rearranged as specified.

Changing Object Orientation

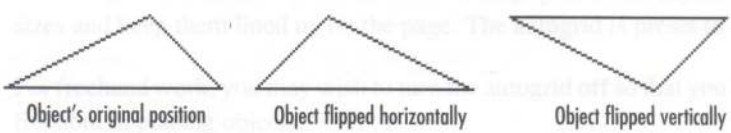
You can use menu commands to rotate and flip objects (figure 4-15).

To flip an object

- Select the object and choose Flip Horizontal or Flip Vertical from the Arrange menu.

The object changes position.

Figure 4-15
Flipping an object



To rotate an object

- Select the object and choose Rotate from the Arrange menu or press Command-Shift-R.

  The object rotates clockwise by 90 degrees.

Changing How Objects Overlap

You can think of objects as cardboard cutouts that can be stacked on top of each other. The stacking order is initially determined by the order of creation with the most recent object on top of the stack.

To change an object's place in the stack

- Select the object and choose one of the four Move commands from the Arrange menu: Move Forward, Move to Front, Move Backward, Move to Back.

  Move Forward and Move Backward change the object's position by one layer. Move to Front and Move to Back move the object to the top or bottom of the stack, respectively (figure 4-16).

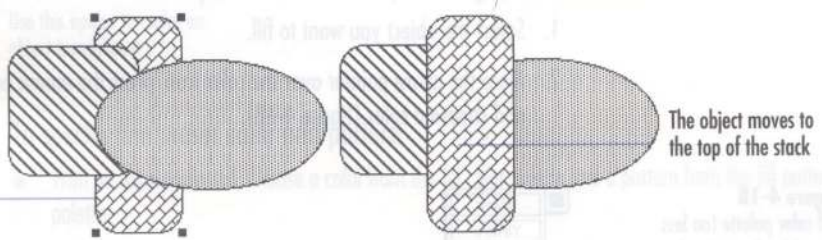


Figure 4-16
Using Move to Front to change how objects overlap

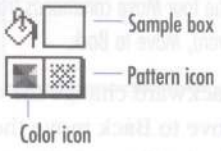
Changing Object Appearance

You can change line width, line color, line pattern, object fill pattern, and object color. You can also change the same attributes in spreadsheet and text frames.

Adding a Fill Pattern or Color

You use the fill tool (figure 4-17) to change the look of objects by filling them with patterns or colors or making them transparent. You can also change the preset options that determine how new objects look.

Figure 4-17
Fill tool



To change an object's fill color and pattern

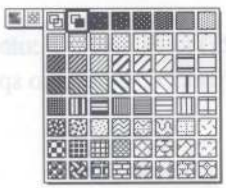
1. Select the object you want to fill.
2. Place the arrow pointer over the color icon, press the mouse button to open the color palette, and choose a color (figure 4-18).

Figure 4-18
Fill color palette (on less than 16-color system)

- **If Your Color Palette Looks Different** The color palette varies with different color systems, so your palette may look different from the one shown here. On a monochrome monitor, colors are listed by name.

3. Place the arrow pointer over the pattern icon, press the mouse button to open the pattern palette, and choose a pattern (figure 4-19).

Figure 4-19
Fill pattern palette



4. Select the transparent icon if you want to see through the object (no fill); select the opaque icon if you want the object to be solid (figure 4-20).

Figure 4-20
Making an object transparent

To specify the preset color and pattern

- With no object selected, choose a color from the fill color palette and a pattern from the fill pattern palette.

  The sample box changes to show the new preset options. Any new objects you draw use these options.

More about pattern and color

Fill Patterns and Transparent Objects —When you fill a transparent object with a pattern or color, the object becomes opaque.

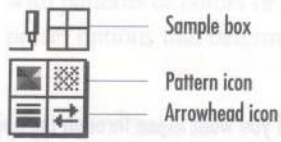
Tear-Off Palettes —You can drag the color or fill palette onto the screen if you're doing a lot of fill work. Place the arrow pointer over the icon and press the mouse button to open the palette. Then drag the palette into the document and release the mouse button. To close a palette, click its close box.

Preset Options —The fill tool is preset to create most objects as white and opaque. The exception is the freehand shape that defaults to transparent.

Changing Line Attributes

You use the pen tool (figure 4-21) to change the color, width and pattern of lines and to add arrowheads to lines. You can also specify whether lines are opaque or transparent.

Figure 4-21
Pen tool



Pen settings govern line attributes for single lines; for rectangles, ovals, arcs, polygons, freehand drawings; and for borders of spreadsheet and text frames. You can change the preset options for line attributes, except in frames.

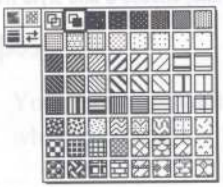
To change an object's pen color, width, pattern, and line style

1. Select the object you want to change.
2. Place the arrow pointer over the color icon, press the mouse button to open the color palette, and choose a color (figure 4-22).

Figure 4-22
Line color palette

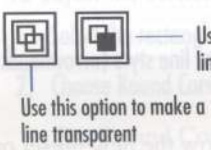
3. Place the arrow pointer over the pattern icon, press the mouse button to open the pattern palette, and choose a pattern (figure 4-23).

Figure 4-23
Line pattern palette



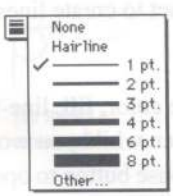
4. Click the transparent icon if you want the line to be transparent or the opaque icon to make it a solid, opaque color (figure 4-24).

Figure 4-24
Making a line transparent



5. Place the arrow pointer over the line width icon, press the mouse button to open the line width submenu, and choose a width (figure 4-25).

Figure 4-25
Line width submenu



None —This option draws an invisible line. You can use this option to enclose a shape you wish to fill with a color or pattern without creating a visible line at the border.

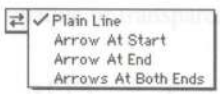
Hairline —This option creates a hairline rule—a delicate line that is less than 1 point wide.

1 Through 8 points —These options draw lines at preset point sizes.

Other —You can use this option to set a custom point size up to 255 points for pen width.

6. If you want to add arrowheads to a line, choose a line style from the arrowhead submenu (figure 4-26).

Figure 4-26
Arrowhead submenu



The options are self-explanatory. After choosing an option, any lines you draw appear with the arrowheads you specified.

To specify the preset options

1. Start with no object selected.
2. Choose a pattern, color, line width, and line style (arrowheads) from the appropriate palette or submenu.

The sample box changes to show the new preset options. Any new objects you draw use these options, except in frames.

More about line settings

Preset Options —The pen tool is preset to create lines that are black and solid (no pattern).

Tear-Off Palettes —You can drag the color, fill, line-width, or arrows palette onto the screen to keep the palette open while you work. Place the arrow pointer over the icon and press the mouse button to open the palette. Then drag the palette into the document and release the mouse button. To close a palette, click its close box.

Changing Spreadsheet Frames

You can specify various aspects of spreadsheet appearance, such as whether to display row headers or the grid that divides columns.

To change spreadsheet appearance

1. Select the spreadsheet frame and choose Modify Frame from the Options menu.

2. Make the changes you want and click OK.

For more information on the options in the Modify Frame dialog box, see "Changing the Appearance of a Spreadsheet," in chapter 5.

Revising Object Shapes

You can take advantage of several menu-based options and drawing techniques when you need to make fine adjustments to the shape of objects.

Adjusting Corners

You can draw round-cornered rectangles and squares, and then adjust the roundness of the corners, or turn sharp corners into rounded corners, with considerable precision.

To adjust the corners of rectangles and squares

1. Select the rectangles or squares whose corners you wish to adjust.
2. Choose Round Corners from the Options menu (or double-click the object).

   The Round Corners dialog box opens.
3. In the dialog box, type a new radius for the circle that forms the basis for a curved corner (figure 4-27 and 4-28).

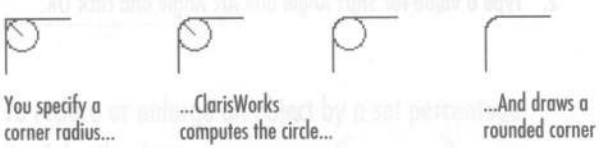
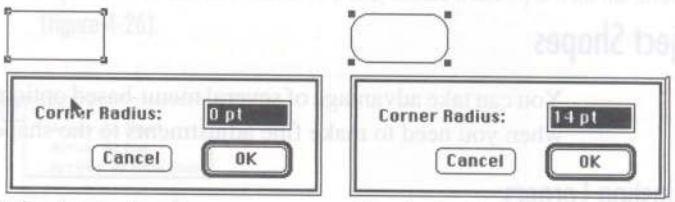


Figure 4-27
Drawing a new radius

4. Click OK.

The corners of the selected objects are adjusted.

Figure 4-28
Changing the radius



Before changing the radius

After changing the radius

Shaping Arcs

Any arc can be imagined as a section of an oval or circle. You can choose how much of the oval, in degrees, to show and from where on the oval to begin measuring. This enables you to create arcs you can't produce with the drawing tool alone (figure 4-29).

To shape an arc

1. Select the arc and choose Modify Arc from the Options menu.

   The Arc Info dialog box opens.

2. Type a value for Start Angle and Arc Angle and click OK.

Figure 4-29
Shaping an arc

Arc with a Start Angle value of 90 degrees and an Arc Angle of 90

Same arc after changing Start Angle to 45 degrees and Arc Angle to 270 degrees

Resizing and Reshaping Objects

You can resize existing objects and reshape existing polygons, arcs, and freehand drawings. You can add extra handles to aid you in changing only the width or height. If you've smoothed out angles and want to restore the angularity of a drawing, you can do so.

To resize or reshape an object

1. Select the object whose size or shape you want to change.
2. Drag one of the handles to reshape or make the object larger or smaller.

   You can hold down the Shift key to lengthen, widen, or proportionally resize the object.

To add more handles to an object

1. Choose Preferences from the Edit menu.
2. Click the option under Object Selection that shows eight handles.

   These additional handles make it easier to change one dimension of an object without affecting the other dimension (figure 4-30).

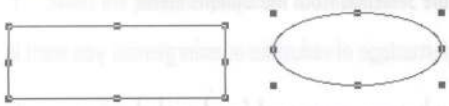


Figure 4-30
Adding handles to an object

To reduce or enlarge an object by a set percentage

1. Select the object.
2. Choose Scale Selection from the Options menu.

3. Type the percentage of reduction or enlargement you want in the two entry boxes (figure 4-31). The percentage can be anything from 25 to 400%.

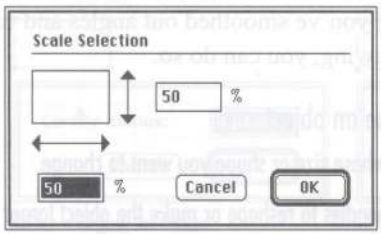


Figure 4-31
The Scale Selection dialog box

To change the size proportionally, type the same value in both boxes. Default values are 50% or the last value entered during the current session.

4. Click OK

ClarisWorks reduces or enlarges the object.

To resize a group of objects by the same amount

1. Select the objects.
2. Choose Scale Selection from the Options menu.
3. Type the percentage of reduction or enlargement you want in the two entry boxes.

To reshape polygons, arcs, and freehand shapes

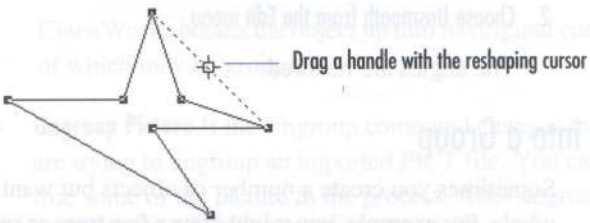
1. Select the object you want to change.
2. Choose Reshape from the Edit menu.

The pointer changes to the reshape cursor. If the object is a polygon, handles are added at each point you clicked (vertex) to draw the object. If the object is an arc, a handle appears at each end point of the arc. Freehand object handle placement depends on the shape of the object.

3. Drag one of the handles to reshape the object.

   A dotted line follows your movements to show the new shape (figure 4-32).

Figure 4-32
Reshaping a polygon



4. With polygons or freehand shapes, Option-click a handle to remove it.
5. With an unsmoothed polygon, click an edge to add a new handle (vertex).

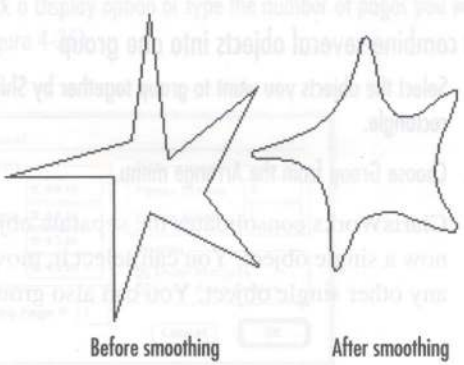
   You can add handles to a freehand object if you unsmooth it first.

6. When you're through reshaping, select a tool or choose Reshape from the Edit menu again to return to the regular pointer.

To smooth the shape of a polygon

1. Select the polygon you want to smooth.
2. Choose Smooth from the Edit menu (figure 4-33).

Figure 4-33
Smoothing a polygon



To revert from a smoothed shape to an angular shape

1. Select the smoothed object or objects.
2. Choose Unsmooth from the Edit menu.

   The angles are restored.

Combining Objects into a Group

Sometimes you create a number of objects but want to treat the objects as a whole. For example, you might draw a few trees as separate objects and arrange the trees as a forest. If you no longer want to deal with individual trees, but only with the forest, you can combine the trees into one forest (figure 4-34). When you perform an action on a group, all members of the group are affected. For example, moving or resizing the group, moves or resizes all the objects in it.

Figure 4-34
Grouped objects

To combine several objects into one group

1. Select the objects you want to group together by Shift-clicking or drawing a selection rectangle.
2. Choose Group from the Arrange menu.

   ClarisWorks consolidates the separate objects into a group. The group is now a single object. You can select it, move it, and resize it just as you can any other single object. You can also group a group with other objects.

To restore individual objects within a grouped object

1. Select the grouped object.
2. Choose Ungroup from the Arrange menu.

   ClarisWorks breaks the object up into its original component objects, some of which may be groups.

- **Ungroup Picture** If the Ungroup command changes to Ungroup Picture, you are trying to ungroup an imported PICT file. You can do this, but you may lose some of the picture in the process. After ungrouping a picture, you can't recombine it into a single picture again by immediately choosing Undo from the Edit menu.

Creating a Multipage Spread

With ClarisWorks documents it's easy to produce a brochure or draw an object larger than one page. ClarisWorks displays the adjacent pages as they will appear when printed. You can then draw objects that are split between pages or easily drag objects from page to page until you have the arrangement you want. Don't forget, text frames and spreadsheet frames are also objects, so they can be placed to span more than one page.

To create a multipage spread

1. Choose Document from the Format menu.
2. Click a Display option or type the number of pages you want across and down, and click OK (figure 4-35).

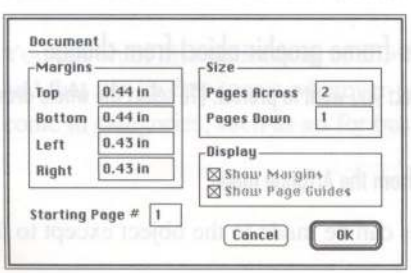


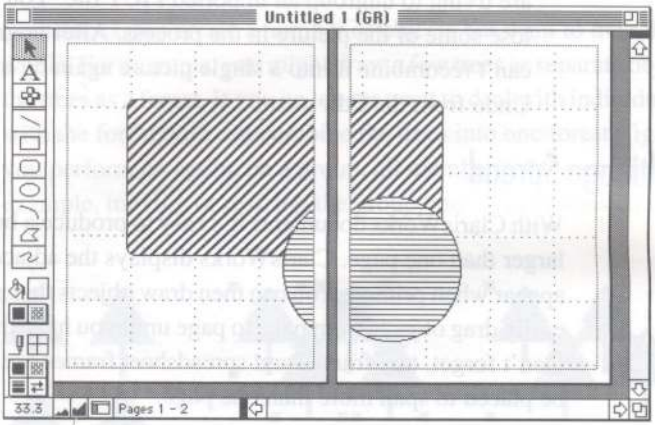
Figure 4-35
Graphics Document dialog box

You can deselect Show Margins and Show Page Guides if you wish. For more information on these features, see "Working With Pages," in chapter 2.

3. **Use the zoom controls to view all the pages (figure 4-36).**

   For instructions on using zoom controls, see "Changing Your View of a Page," in chapter 2.

Figure 4-36
A two-page spread



Preventing Changes

After spending time developing a complex drawing, you may wish to protect your work from inadvertent changes—your own or someone else's. When an object is locked, its handles are dimmed to indicate it can't be changed.

To protect a non-frame graphic object from change

1. **Select the object you want to protect. (To select the whole drawing, choose Select All from the Edit menu.)**
2. **Choose Lock from the Arrange menu.**

   No changes can be made to the object except to the contents of frames.

To remove protection from a locked object

1. Select the locked object or objects.
2. Choose Unlock from the Arrange menu.

You can now work with the object as usual.

Using Clip Art

Nothing brightens up a letter or announcement more than a picture (figure 4-37). You can copy and paste graphics from a ClarisWorks document or from other compatible applications into any document except a communications document. Some graphics, such as scanned photographs, can use a lot of memory, so you may need to do some cropping or increase the memory allocated to ClarisWorks.

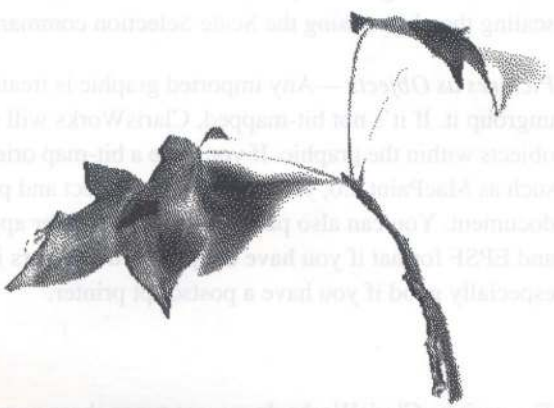


Figure 4-37
Sample of clip art

You can order disk collections of *clip art*—art that isn't protected by copyright and that you're free to use wherever you want. Clip art collections usually come in categories, such as art for business, home use, sports, or school.

To use clip art

1. **Open the document in which you want to place the picture.**
2. **Leaving that document open on the screen, choose Insert from the File menu.**
3. **In the Open dialog box, switch folders to find your art folder.**

   For details on finding files in the Open dialog box, see your Macintosh owner's guide.

4. **Select the art name you want and click Open (or double-click the name).**

   ClarisWorks inserts the picture into the document.

More about pasting clip art

Resizing —You can resize a pasted picture by selecting it and dragging its handles, although bitmap clip art doesn't always look good if resized. Try scaling the object using the Scale Selection command (Options menu).

Pictures as Objects —Any imported graphic is treated as one object until you ungroup it. If it's not bit-mapped, ClarisWorks will restore the individual objects within the graphic. If you have a bit-map oriented graphics application such as MacPaint 2.0, you can copy the object and paste it into a ClarisWorks document. You can also paste objects from other applications in PICT, TIFF, and EPSF format if you have the proper translators installed. EPSF clip art is especially good if you have a postscript printer.

Covered Elsewhere

The various ClarisWorks document types share common techniques and features, many of which are important to your work with graphic documents.

Changing Ruler Settings

You can change the units of measure used in the text ruler. For information, see "Changing Ruler Settings," in chapter 2.

Working with Pages

You can adjust page margins and switch between viewing your document with or without margins. For details, see "Working With Pages," in chapter 2. You can also zoom in and out to change the level of detail as explained in "Changing Your View of the Page," in chapter 2.

Adding Automatic Elements

You can automatically insert page numbers, the current date and time, headers, and footers. These elements work the same way in all ClarisWorks documents. See "Working with Pages," in chapter 2.

Chapter 5

Working with Spreadsheets

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Chapter 5

Working with Spreadsheets

This chapter gives step-by-step instructions and reference information for working in the spreadsheet environment. The instructions provided here cover spreadsheet documents and frames. Additional reference information appears toward the end of the chapter, in the form of "short courses."

An Overview

A ClarisWorks spreadsheet is the Macintosh equivalent of a columnar pad of paper. The difference is that you can build the ClarisWorks sheet any way you wish, adjusting the width of columns, changing the type style and size, and turning numbers into eye-catching charts.

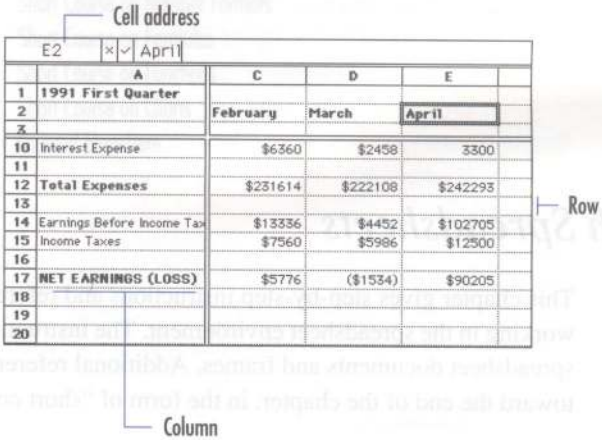
Although the most common use for a spreadsheet is numeric work, you can use a spreadsheet for any information you need to organize and present—in columns and rows.

Cells, Columns, and Rows

When you open a new spreadsheet, or a spreadsheet frame, you see that columns and rows are already set up for use. The box formed at the intersection of a column and a row is a **cell.**

Columns run vertically, **rows** horizontally (figure 5-1). Together, columns and rows create a cell grid similar to the grid on a touring map. Each cell has a unique identity based on its position in the grid. For example, the cell at the intersection of column E and row 2 is identified as cell E2. The notation E2 is referred to as the cell address. You use **cell addresses** when you build spreadsheet formulas.

Figure 5-1
Spreadsheet grid



The cell is the basic data unit in a spreadsheet. One cell is always the **current cell** (the active, selected cell). The current cell has a highlighted border.

A group of cells is a **cell range.** You identify a range by using the address of the upper-left and lower-right cells and two periods: B3..D11 (figure 5-2). These cells are the **anchor points** of the range.

Figure 5-2
Selected range of cells

Range selected is B3..D11

B3 ✕ ✓ 2500

	A	B	C	D
1	**Expenses**	**Jan**	**Feb**	**Mar**
2				
3	Advertising	2500	1500	2800
4	Rent	2800	2800	2800
5	Telephone	250	355	275
6	Supplies	300	675	950
7	Insurance	1200	1200	1200
8	Equipment Rental	490	490	490
9	Professional Services	500	1200	2500
10	Salaries	30000	25000	25000
11	Utilities	490	520	450

Upper-left anchor point

Data Entry Bar

To enter data, you select a cell by clicking it. As you enter data, the information appears in the text box of the data entry bar (figure 5-3). After you confirm an entry by clicking the accept button or pressing Return, Tab, or an arrow key or the Enter key, the data appears in the selected cell. The contents of the active cell appear in the entry bar.

Figure 5-3
Data entry bar

Cancel button
Address box | Accept button | Text box

B3 ✕ ✓ 2500

	A	B	C	D
1	**Expenses**	**Jan**	**Feb**	**Mar**
2				
3	Advertising	2500	1500	2800
4	Rent	2800	2800	2800
5	Telephone	250	355	275
6	Supplies	300	675	950
7	Insurance	1200	1200	1200
8	Equipment Rental	490	490	490
9	Professional Services	500	1200	2500
10	Salaries	30000	25000	25000
11	Utilities	490	520	450

The address of the current cell appears in the address box.

Data Types

A spreadsheet can contain several types of data:

- text
- numbers
- formulas that create text, number, date, or time results

A spreadsheet can also contain error messages.

Data you type for ClarisWorks to use exactly as you type it is called a **constant.** A constant doesn't change until you edit the entry in the entry bar. A constant can be text, a number, a date, or a time.

For details on data types, see "Short Course on Data Types," later in this chapter.

Entering Data

To enter data

1. Select a cell in the spreadsheet.
2. Type the data in the text box of the entry bar.

   You don't need to click in the text box—just begin typing. The data appears in the text box as you type. You can enter up to 255 characters for a cell. The text box scrolls automatically to the right if you exceed the length of the box.

   You can type text titles for columns and rows; you don't have to fill the cells with numbers.

3. To cancel the entry, click the cancel button in the entry bar ("X") before pressing Return, Tab, Enter, an arrow key; or clicking the accept box.

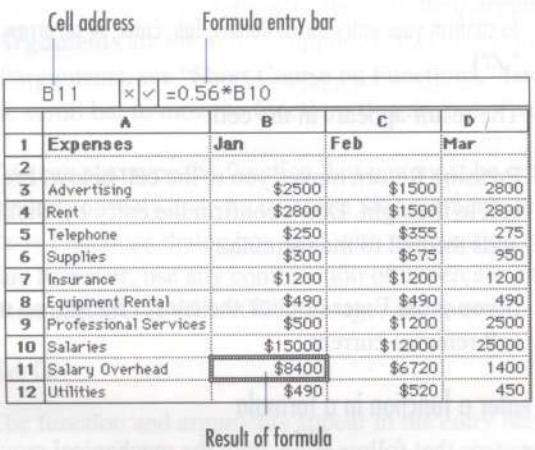
4. **To confirm the entry, press Return, Tab, Enter or an arrow key (or click the accept button).**

   Pressing Return moves you to the cell below. Pressing Tab moves you one cell to the right. The arrow keys move you one cell in the direction of the arrow. You can also confirm the entry by clicking the cell or clicking another cell. If you press Enter or click the cancel button, no movement occurs, and the cell remains current.

Entering Formulas

A formula performs a computation whose results vary with the data in other cells or with the values you supply. When you enter a formula in a cell, ClarisWorks computes a result and supplies that result as data for that cell (figure 5-4).

Figure 5-4
A formula and its result



	A	B	C	D
1	Expenses	Jan	Feb	Mar
2				
3	Advertising	$2500	$1500	2800
4	Rent	$2800	$1500	2800
5	Telephone	$250	$355	275
6	Supplies	$300	$675	950
7	Insurance	$1200	$1200	1200
8	Equipment Rental	$490	$490	490
9	Professional Services	$500	$1200	2500
10	Salaries	$15000	$12000	25000
11	Salary Overhead	$8400	$6720	1400
12	Utilities	$490	$520	450

Building formulas isn't as complicated as you might think. Simply by clicking, you can enter formulas that add the contents of various cells. With a little experience, you can move on to more complex calculations when you need them.

To enter a formula

The steps that follow show only the mechanical requirements for a formula. For details, see "Short Course on Formulas," later in this chapter.

1. **Select a cell in the spreadsheet.**
2. **Type an equal sign (=) in the text box in the entry bar.**

   The equal sign tells ClarisWorks to interpret the entry as a formula.

3. **Enter the formula after the equal sign.**

   You can put a space before or after any operators. ClarisWorks is not case-sensitive, so capitalization doesn't matter.

4. **To cancel the entry, click the cancel button in the entry bar ("X").**
5. **To confirm your entry, press Return, Tab, Enter, or an arrow key (or click the accept button "✓").**

   The result appears in the cell.

   Pressing Return moves you to the cell below. Pressing Tab moves you one cell to the right. Don't confirm the entry by clicking another cell; doing so adds the cell to the formula.

   If you press Enter or click the cancel button, no movement occurs, and the cell remains current.

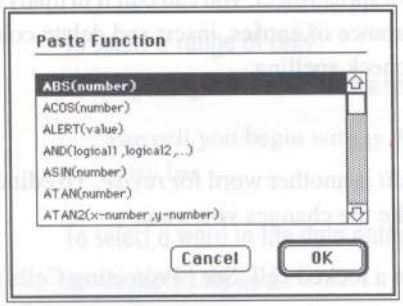
To enter a function in a formula

The steps that follow show only the mechanical requirements for entering a function in a formula. Functions are a type of shorthand for writing formulas. For details, see "Short Course on Functions," later in this chapter.

1. **Click in the formula at the spot where you want to place the function.**
2. **Choose Paste Function from the Edit menu.**

You see the Paste Function dialog box (figure 5-5).

Figure 5-5
Selecting a function



3. **Select the function you want.**

   Functions are listed alphabetically, with their arguments in parentheses. (**Arguments** are the values supplied for a computation. For an explanation of arguments, see "Short Course on Functions," later in this chapter.) Use the scroll bar to move to functions that are out of view.

   You can also type the function, but you must be exact. The name must be spelled correctly and you must use the arguments in the order shown in the Paste Functions dialog box, and with punctuation exactly as shown. You can, however, use any combination of uppercase and lowercase letters. Examples are: AVERAGE, Average, and average.

4. **Click OK.**

   The function and arguments appear in the entry bar. The first argument is selected so that you can immediately replace it with the required values.

5. **Replace the argument names with values or cell references.**

   You can type values or cell references, or you can click cells or drag through a range to enter the references. For example, if you wanted to calculate the average of some numbers in a range of cells, the formula might look like this:

   ```
   AVERAGE(D14..D48)
   ```

   The range of cells D14..D48 is the argument.

6. **Press Return or Enter to confirm the formula.**

Revising a Spreadsheet

Once you have set up a spreadsheet, you can edit it in many different ways. You can change the appearance of entries, insert and delete columns and rows, search for data, and check spelling.

Editing Data

In computer terms, *edit* is another word for *revise*. To edit data, you first select the data and then make the changes you want.

You can't edit data in a locked cell. See "Protecting Cells from Change" later in this chapter.

To select a single cell

- Click the cell.

  A heavy border appears around a selected cell, and the cell contents (if any) appear in the data entry bar.

To select the whole spreadsheet

- Click the box in the upper-left corner (figure 5-6).

To select a range of cells in the spreadsheet that contain entries

- Option-click the box in the upper left corner.

To select a whole row or column

- Click the row or column header, or drag through the cells (figure 5-6).

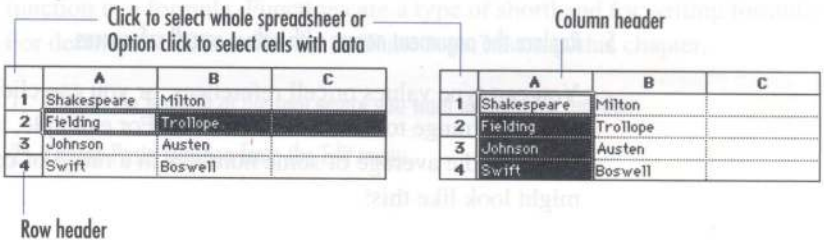


Figure 5-6
Row and column headers

The row or column is highlighted to show it is selected. The data in the first cell in the row or column appears in the data entry bar.

To select a range of cells

- Drag through the cells, or click the first cell in the range and then Shift-click the last cell.

The cell you begin with is the current cell. Its contents appear in the data entry bar.

To select a word in the data entry bar

- Double-click the word.

To edit data or formulas

1. Select the cell that contains the entry you want to change.

   The value in the cell appears in the entry bar text box.

2. In the text box, click to place the insertion point where you want to insert data, and type the changes.

   To replace all the data in a cell, begin typing immediately after you select the cell. (You don't have to click or select data in the text box.)

   To remove a portion of an entry, drag to select the portion and press Delete or Backspace.

3. To cancel the changes, click the cancel button in the data entry bar ("X") before you press Tab.

4. To confirm the changes, press Return or Tab (or click the accept button in the entry bar).

   Pressing Return moves you to the cell below. Pressing Tab moves you one cell to the right.

Cutting, Copying, Clearing, and Pasting

You can cut or copy data, formats, and formulas from one cell and paste them into another cell. This is a convenient way to rearrange the contents of a spreadsheet or to use the same information in more than one place. You can also copy data from the current spreadsheet and paste it into a different spreadsheet.

To cut or copy the contents of a cell

1. Click the cell to select it.
2. Choose Cut or Copy from the Edit menu.

   A copy of the cell contents—whether cut or copied—is placed on the Clipboard.

   You can copy and paste cell ranges. For information, see "To copy and paste a range of cells," later in this section.

◆ **Note** The Cut command doesn't remove the cells themselves, but only their contents. For instructions on removing cells, see "Inserting and Deleting Cells, Rows, and Columns," later in this chapter.

To paste the contents of the Clipboard

1. Click another cell to select it.
2. Choose Paste from the Edit menu.

   A copy of the Clipboard's contents is placed in the selected cell.

   You can continue to paste the same contents as many times as you like. The contents of the Clipboard remain the same until you cut or copy something else.

To paste a value, but not the formula that produced it

1. Select a cell and copy it as described earlier.
2. Click the target cell to select it.

3. **Choose Paste Special from the Edit menu.**

   You see the Paste Special dialog box (figure 5-7).

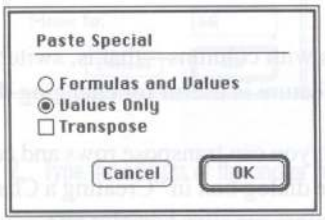


Figure 5-7
Pasting values only

4. **Click Values Only and click OK.**

   Only the value that was copied onto the Clipboard is pasted (the formula that produced the value isn't pasted).

To clear an entry completely

1. **Click the cell you want to clear.**
2. **Choose Clear from the Edit menu.**

   The entry is removed, and a copy isn't placed on the Clipboard. At your next click, the entry is gone forever, so be careful when you use the Clear command.

   You can also press Delete to clear an entry in a selected cell.

3. **If you change your mind, choose Undo Clear from the Edit menu.**

To copy and paste a range of cells

1. **Drag to select the range of cells you want to copy.**
2. **Choose Cut or Copy from the Edit menu.**
3. **Click the cell that will be the upper-left (anchor) cell of the new location.**
4. **Choose Paste from the Edit menu.**

   The copy of the range is placed in the new location, beginning at the anchor cell.

You can also paste only the values in a range, and not the formulas. Follow the steps in "To paste a value, but not the formula that produced it," earlier in this section.

Transposing Rows and Columns

You can transpose rows with columns—that is, switch columns to rows and rows to columns. This feature is useful for changing the orientation of data.

When you create a chart, you can transpose rows and columns as you set up the chart. For details, see the dialog box in "Creating a Chart," later in this chapter.

To transpose rows and columns

1. Select the range of cells you want to transpose.
2. Choose Copy from the Edit menu.
3. Choose Paste Special from the Edit menu.

   You see the Paste Special dialog box (figure 5-7).

4. In the dialog box, click Transpose, and click OK.

   ClarisWorks switches columns to rows and rows to columns and updates formulas to reflect the new cell positions.

Moving the Contents of Cells

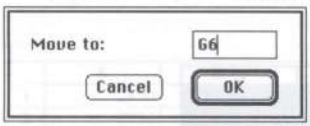
You can move the contents of a cell, or of a selected range, to another spot in the spreadsheet without copying and pasting.

To move cells using a dialog box

1. Select the cell or range of cells you want to move.
2. Choose Move from the Calculate menu.

You see a small dialog box asking where you want to move the selected cells (figure 5-8).

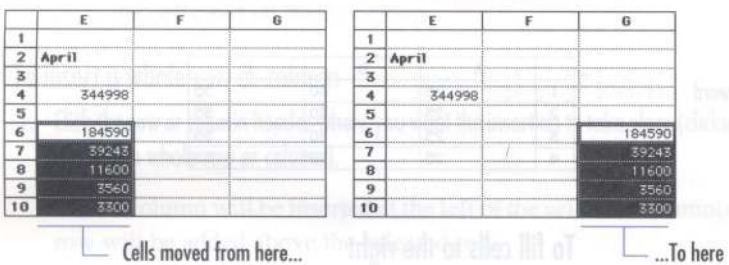
Figure 5-8
Typing the cell address



2. Type the address of the anchor cell for the new location, and click OK.

The selected cells are moved. Figure 5-9 shows cells moved from the range E6..E10 to G6..G10. The anchor cell of the new location is G6.

Figure 5-9
Moving selected cells



To move cells quickly

1. Select the cell or range you want to move.
2. Hold down Command-Option, and then click the cell where you want the selected range to go.

ClarisWorks moves the cell contents to the new location. Any formulas which are adjusted to reflect the new configuration.

Filling Cells Automatically

For repetitious information, you can avoid retyping by copying the contents of cells into selected cells below or to the right of the cells you copy. This copying is called **filling right** and **filling down.**

To fill cells downward

1. Drag right or across one row to select the cells that contain the values or formulas you want to duplicate.

2. **Continue to drag downward to select cells you want to fill (figure 5-10).**

   You can also select by clicking the cell with the data and then Shift-clicking the last cell in the column.

Figure 5-10
Selecting cells to fill

3. **Choose Fill Down from the Calculate menu.**

   ClarisWorks fills in the data in all selected rows beneath (figure 5-11 shows the result).

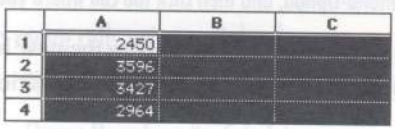
Figure 5-11
Cells filled downward

	A	B	C
1	25	30	55
2	25	30	55
3	25	30	55
4	25	30	55

To fill cells to the right

1. **Drag to select the one column of cells that contains the values or formulas you want to duplicate.**
2. **Continue to drag to select cells to the right of the column that contains the data (figure 5-12).**

Figure 5-12
Selecting cells to fill



3. **Choose Fill Right from the Calculate menu.**

   ClarisWorks duplicates the data in all the selected cells to the right (figure 5-13).

Figure 5-13
Rows filled to the right

	A	B	C
1	2450	2450	2450
2	3596	3596	3596
3	3427	3427	3427
4	2964	2964	2964

Inserting and Deleting Cells, Rows, and Columns

You can insert and delete ranges, columns, or rows of cells anywhere in a spreadsheet. Inserting cells doesn't overwrite any existing cells. Deleting cells removes the cells and all their contents.

To insert a whole row or column

1. **Click the row or column header where you want the insertion to take place (clicking the header selects the whole row or column).**

   A new column will be inserted at the left of the selected column(s), or a new row will be added above the selected row.

   The number of rows or columns you select determines the number of rows or columns that will be inserted.

2. **Choose Insert Cells from the Calculate menu.**

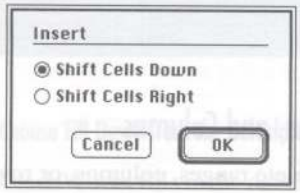
   The cells are inserted.

To insert cells when a range is selected

1. Select the range of cells and choose Insert Cells from the Calculate menu.

   You see the Insert dialog box (figure 5-14). You won't see this dialog box if you selected whole rows or columns.

Figure 5-14
Inserting cells



2. Click Shift Cells Down or Shift Cells Right.
3. Click OK.

   The new cells are inserted (figures 5-15 and 5-16).

Figure 5-15
Cells shifted down

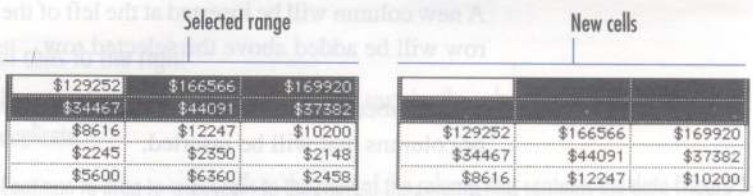
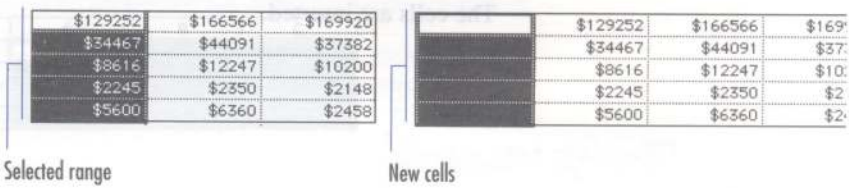


Figure 5-16
Cells shifted right



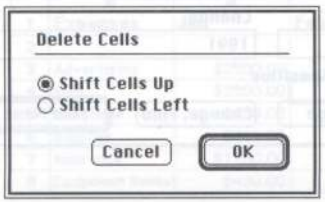
To delete cells

1. Select the range, rows, or columns you want to delete.

2. **Choose Delete Cells from the Calculate menu.**

   If you selected a range rather than whole rows or columns, you see the Delete Cells dialog box (figure 5-17).

Figure 5-17
Deleting cells



3. **In the dialog box, click Shift Cells Up or Shift Cells Left.**

4. **Click OK.**

   ClarisWorks removes the selected rows or columns, moving remaining columns to the left or remaining rows up.

   References to cells in the deleted range, if any, are changed to "BADCELL" or "BADRANGE" references and show "#Ref!" errors.

Searching for Data

You can search a spreadsheet for specified text expressions and numbers.

A search starts at the cell to the right of the current cell and proceeds to the right, through the end of the current row and then on to the beginning of the next row. The search continues until the first cell that matches your search criteria is found. That cell becomes the current (active) cell.

To find data

1. **Select the cell where you want the search to begin.**

   To search the whole spreadsheet, select cell A1.

2. Choose Find/Change from the Edit menu.

   You see the Find/Change dialog box (figure 5-18).

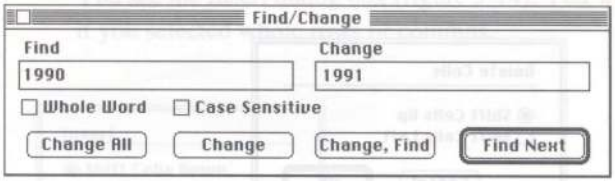


Figure 5-18
Finding data

   You can type a replacement value for the found data in the Change box. Click "Change, Find" to insert the new value and search for the next occurrence of the search data.

   The Find/Change dialog box works the same way it does in other documents (see "Searching for Information" in chapter 2).

3. Continue searching and making changes as you go.
4. Click the close box when the search is complete.

Changing the Appearance of a Spreadsheet

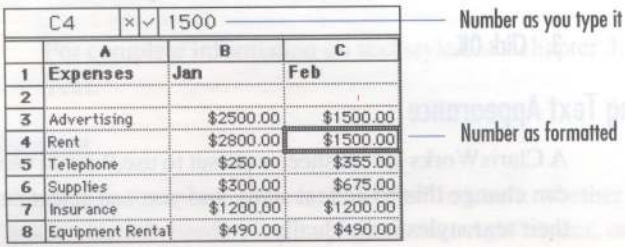
You can dress up the appearance of a spreadsheet by changing the format used in a cell. **Cell format** refers to attributes such as the way numbers are displayed, the height and width of cells, and the presence or absence of borders.

Setting the Format for Numbers

The way a number appears in a cell depends on the number format and the precision set for that cell (figure 5-19). In the entry bar, the number is unformatted; in the cell, it appears as specified.

How you show numeric data, including dates and times, has no effect on how ClarisWorks stores the numbers and uses them in calculations.

Figure 5-19
Numeric entries



	A	B	C
1	Expenses	Jan	Feb
2			
3	Advertising	$2500.00	$1500.00
4	Rent	$2800.00	$1500.00
5	Telephone	$250.00	$355.00
6	Supplies	$300.00	$675.00
7	Insurance	$1200.00	$1200.00
8	Equipment Rental	$490.00	$490.00

- **When Cells Are Too Small** If numbers can't be displayed because the cells are too narrow, ClarisWorks fills the cells with pound signs (######). To bring the numbers into view, make the cells wider. (See "Changing the Size of Columns and Rows" later in this chapter.)

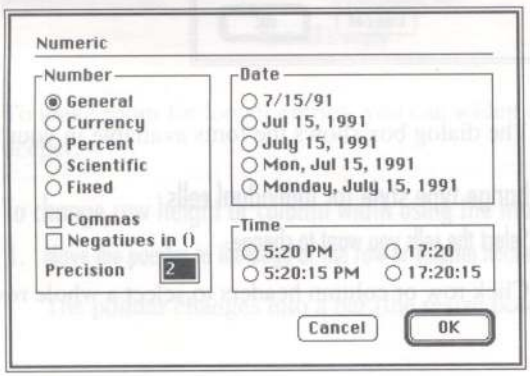
The steps that follow show only the mechanical requirements for setting number format. For more information, see "Short Course on Number Formats," later in this chapter.

To set number format

1. **Select the cells whose format you want to change and choose Number from the Format menu (or double-click a single cell).**

   You see the Numeric dialog box (figure 5-20).

Figure 5-20
Changing number format



2. Click the options you want to use.

   For details on any option you don't understand, see "Short Course on Number Formats," later in this chapter.

3. Click OK.

Changing Text Appearance

A ClarisWorks spreadsheet is preset to use 9-point Geneva to display text. You can change this basic text style, and you can select cells or cell ranges and set their text styles individually.

To change the preset style

1. Choose Default Font from the Options menu.

   You see the Default Font dialog box (figure 5-21).

2. Choose a different font and size, and click OK.

   The choice applies to the entire spreadsheet.

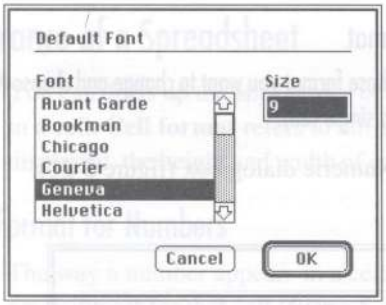


Figure 5-21
Changing the default font and size

The dialog box shows the fonts available in your Macintosh System file.

To change type style for individual cells

1. Select the cells you want to change.

   Click row or column headers to select a whole row or column.

2. **Choose a different font, size, style, or text color from the submenus in the Format menu.**

   ClarisWorks changes the style for the selected elements as soon as you choose a new font, size, style, or text color.

   For complete information on text styles, see chapter 3, "Working with Text."

Changing Alignment

Alignment determines where data "sits" in a cell: whether data is lined up against the left border, lined up against the right border, or centered.

To change the alignment of data in a cell

1. **Select the cells you want to change.**
2. **Choose an alignment option from the Alignment submenu of the Format menu.**

   The alignment changes as soon as you choose a new option.

Changing the Size of Columns and Rows

With any text entry, ClarisWorks shows as much of the text in the cell as possible. If you overrun the cell and the cell to the right is empty, ClarisWorks continues the text over the next cell. If the next cell contains data, the text in the current cell is cut off at the cell border (figure 5-22).

Figure 5-22
Text overruns

Supplies	300
Insurance	1200
Equipment Rental	490
Professional Services	

Next cell is empty

Supplies	300
Insurance	1200
Equipment Rental	490
Professional Ser	500

Next cell contains data

To make room for longer entries, you can widen columns and make rows deeper.

To change row height or column width using the mouse

1. **Move the pointer to the edge of the row or column header.**

   The pointer changes into a bar (the resize pointer).

2. **Drag the bottom edge of the row, or the right edge of the column, until you have the size you want.**

   A dotted line shows you the new location of the border. The height or width is adjusted when you release the mouse button.

To make precise changes to column or row size for the whole spreadsheet

1. **Choose Select All from the Edit menu (or click the upper left box).**
2. **Choose Column Width or Row Height from the Format menu.**

   You see the Column Width or Row Height dialog box (figure 5-23).

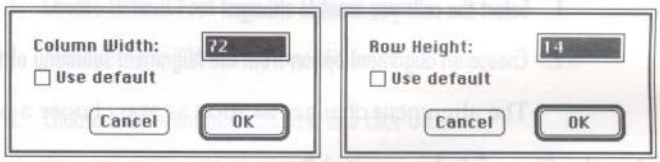


Figure 5-23
Changing column and row dimensions

3. **In the dialog box, type a number, in points, for the size you want.**

   The preset column width is 72 points (1 inch). The preset row height is 14 points.

   If you previously changed width or height and want to revert to the preset size, click "Use default."

4. **Click OK.**

   ClarisWorks adjusts the spreadsheet to the new measurements.

Adding Borders

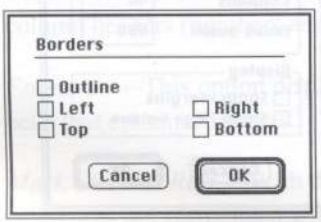
To dress up a spreadsheet when you print—or to clarify data relationships—you can add borders to selected cells.

To add cell borders

1. Select the cell, row, column, or range of cells to which you want to add a border.
2. Choose Borders from the Format menu.

   You see the Borders dialog box (figure 5-24).

Figure 5-24
Adding a border



3. Click the options you want to use, and click OK.

   ClarisWorks adds the border you specify as soon as you make a choice.

   To completely surround all selected cells with a border, choose Outline. To remove a border you no longer want, deselect the option.

Changing the Size of the Spreadsheet

A new spreadsheet is set up to contain 40 columns and 500 rows. Spreadsheet frames are setup to contain 10 columns and 50 rows. You can change the number of rows and columns if you wish.

To change the number of rows and columns

1. Choose Document from the Format menu.

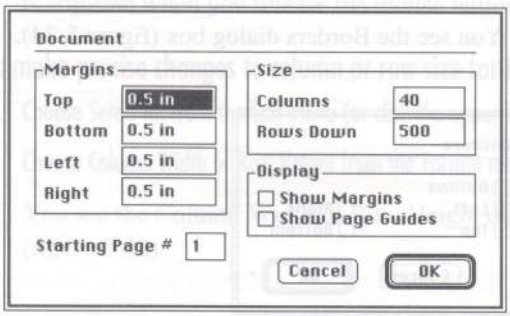
   You see the Document dialog box (figure 5-25).

2. In the Size boxes, type the number of columns and rows you want.

3. Click OK.

The spreadsheet is revised as specified.

Figure 5-25
Changing the number of columns and rows



Changing the Display

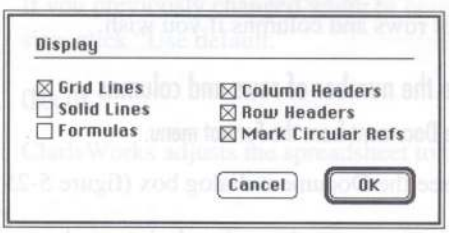
You can make some basic changes to the way a spreadsheet appears on the screen and when you print.

To change the way cells appear on the screen

1. Choose Display from the Options menu.

   You see the Display dialog box (figure 5-26).

Figure 5-26
Changing cell appearance



2. Click the options you want.

   The preset options are as shown in Figure 5-26. A check mark indicates active options. Changes you make are visible on screen and in effect when you print.

3. Click OK.

More about display options

Grid Lines —This option displays dotted grid lines around each cell on the spreadsheet. When unchecked, no lines appear.

Solid Lines —This option replaces the dotted grid lines with solid lines.

Column Headers and Row Headers —These options display the row and column headers (numbers and letters—not any headings you have typed).

Formulas —This option displays formulas, rather than computed values, in cells that contain formulas.

Mark Circular Refs —With this option on, cells that contain circular cell references are surrounded with dots to help you spot formulas that may need rethinking. For more information on circular references, see "Short Course on Formulas," at the end of this chapter.

To hide rows or columns temporarily

1. **Move the pointer to the edge of the row or column header.**

   The pointer changes into a bar (the resize pointer).

2. **Drag the bottom of the row, or the right edge of the column, until the row or column disappears.**

   ClarisWorks hides the row or column. It won't appear on the screen or when you print.

To restore hidden rows or columns

- Move the pointer to the edge of the row below, or the column on the right, and drag the resize pointer.

  The hidden cells come back into view.

Calculating and Recalculating

As soon as you confirm a formula in a cell, ClarisWorks automatically computes the result and displays it in that cell. If formulas in other cells refer to that cell, their results are changed as well. This process is called **automatic recalculation.**

Automatic recalculation is the easiest and fastest way to make sure your figures are correct. If a spreadsheet is large and complex, however, constant automatic recalculation may be too time consuming, for ClarisWorks will recalculate each time you make or change an entry. Therefore, you may want to calculate only at the end of a session, after you've entered a significant batch of data.

To delay recalculation

1. With a spreadsheet open or a spreadsheet frame active, choose Auto Calc from the Calculate menu.

   The check mark next to the Auto Calc command disappears, indicating that the feature is turned off.

   ClarisWorks won't recalculate formulas until you give the instruction to do so.

2. When you've finished a data entry session, choose Calculate Now from the Calculate menu.

   All formulas in the spreadsheet are updated.

Sorting a Range of Cells

You can sort values in selected columns or rows. Sorts can be done vertically, by columns, as shown in figure 5-27, or horizontally, by rows, as shown in figure 5-28.

Figure 5-27
Sorting vertically

Jones	U.S.A	East	Atlanta	2544
Smythe	U.K.	South	London	6903
Abernathy	France	Central	Paris	4588

Before sort

Abernathy	France	Central	Paris	4588
Jones	U.S.A	East	Atlanta	2544
Smythe	U.K.	South	London	6903

After sort

Figure 5-28
Sorting horizontally

Jones	Smythe	Abernathy
U.S.A.	U.K.	France
East	South	Central
Atlanta	London	Paris
2544	6903	4588

Before sort

Abernathy	Jones	Smythe
France	U.S.A.	U.K.
Central	East	South
Paris	Atlanta	London
4588	2544	6903

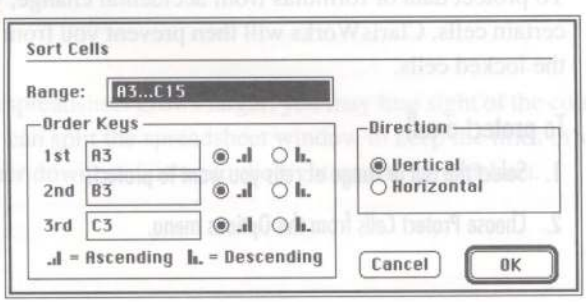
After sort

To sort the values in a range of cells

1. Select the column or range whose values you want to sort.
2. Choose Sort from the Calculate menu.

   You see the Sort Cells dialog box (figure 5-29). In figure 5-29, a range was selected for vertical sorting.

Figure 5-29
Setting the sort order



3. **Type a beginning cell address in an Order Keys box for each row or column you want to sort.**

   Figure 5-29 shows a vertical sort (by column). The sort will be in Column A and will begin in cell A3. When column A has duplicate values, a sort of the corresponding cells in column B will be done, starting with cell B3. And when column B has duplicate values, a sort of the corresponding cells in column C will be done, starting with cell C3.

   If you want to sort by row, click Horizontal in the Direction box and enter the cell address(es) for the Order Key(s).

4. **For each address, click a sort order.**

   Ascending sorts in alphabetical order for text and lowest-to-highest for numbers. Descending sorts in reverse alphabetical order for text and highest-to-lowest order for numbers.

5. **If you want to sort down columns, click Vertical (preset). If you want to sort across rows, click Horizontal.**
6. **Click OK.**

   Text values are sorted in alphabetical order and numeric values in numeric order. If a column or row contains both text and numbers, text values are sorted first, then numbers.

   The contents of rows or columns are kept together when you sort.

Protecting Cells from Change

To protect data or formulas from accidental change, you may want to lock certain cells. ClarisWorks will then prevent you from changing the contents of the locked cells.

To protect a cell

1. **Select the cell or range of cells you want to protect.**
2. **Choose Protect Cells from the Options menu.**

To unlock a protected cell

1. Select the cell or range of cells you want to unlock.
2. Choose Unprotect Cells from the Options menu.

Setting Page Breaks

You can specify where ClarisWorks breaks pages (ends one page and begins another). Page breaks occur automatically when a page is full, and you can't change those breaks. You can, however, manipulate page breaks by adding one at a more convenient spot, above the spot where an automatic break is inserted, thereby creating a shorter page.

To set a page break

1. Select the row, column, or cell where you want the page to end.
2. Choose Add Page Break from the Options menu.

   ClarisWorks breaks the page below a row, to the right of a column, or at the bottom right of a cell.

To remove page breaks

1. Select the row, column, or cell where you previously set a page break.
2. Choose Remove Page Break from the Options menu.

   To remove all page breaks, choose Remove All Breaks.

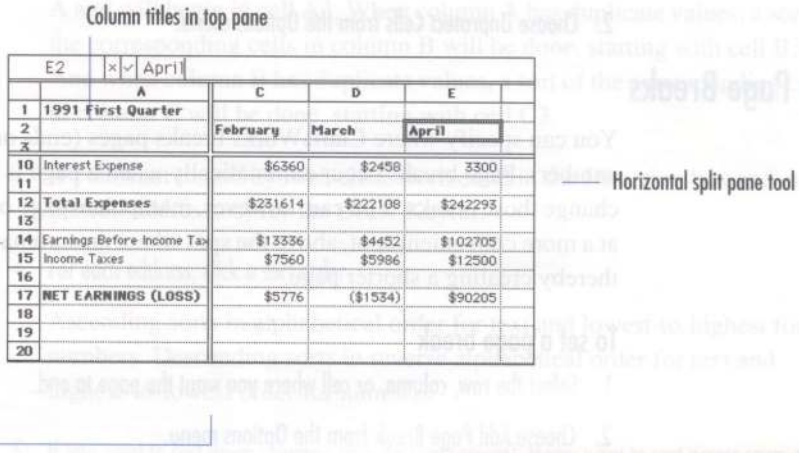
- **Full Pages** ClarisWorks doesn't remove page breaks that are set automatically when a page is full.

Splitting the View

As a spreadsheet grows larger, you may lose sight of the column and row titles. You can split the spreadsheet window to keep the titles in view as you work farther down, or farther to the right, in the spreadsheet.

Figure 5-30 shows a spreadsheet split both horizontally and vertically.

Figure 5-30
Splitting a spreadsheet into panes



To split the view into panes

- Drag one of the split pane tools.

  Scroll bars are active in each pane, so you can scroll titles or data into view as needed.

To close a pane

- Drag the split pane tool back to the edge of the window.

Changing the Page View

A spreadsheet is preset to appear without margins showing, but you can switch to a view of the actual page (page view). Page view shows the spreadsheet as it will be printed.

ClarisWorks switches you automatically to page view if you insert a header or footer in a spreadsheet. (For information on inserting headers and footers, see "Adding a Header or Footer," in chapter 2.

To switch to page view

- Choose Page View from the View menu.

  A check mark indicates that page view is on. To switch back, choose Page View again.

Working with Charts

You can transform the numbers in a spreadsheet into interesting, attractive charts that illustrate relationships in a way that numbers can't. You can use a chart to highlight trends and to make comprehension easier.

Charts are graphic representations of the data in a spreadsheet. When you change data in a spreadsheet, ClarisWorks updates a related chart automatically (figure 5-31).

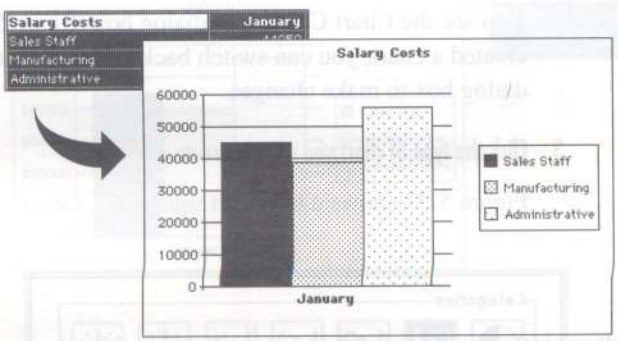


Figure 5-31
From spreadsheet to chart

Charts are objects, which means you can revise them using the graphics tools. (See chapter 4, "Working with Graphics.") You can paste a chart into any type of ClarisWorks document (except a communications document). Automatic links to the original spreadsheet are lost when you cut a chart and paste it in another document, or if you delete a spreadsheet frame on which a chart was based.

Creating a Chart

The steps that follow show only the mechanical requirements for creating a chart. For more details, see "Short Course on Charts," later in this chapter.

To create a chart

1. **Select the range of cells you want to chart.**

   A column of identifying text, such as a list of expense categories, will become the legend of a chart. The columns of data to the right will become the data series represented by the chart itself. Figure 5-32 shows a selected range.

Figure 5-32
Selecting a range of cells

Salary Costs	January
Sales Staff	$44950
Manufacturing	$38555
Administrative	$55990

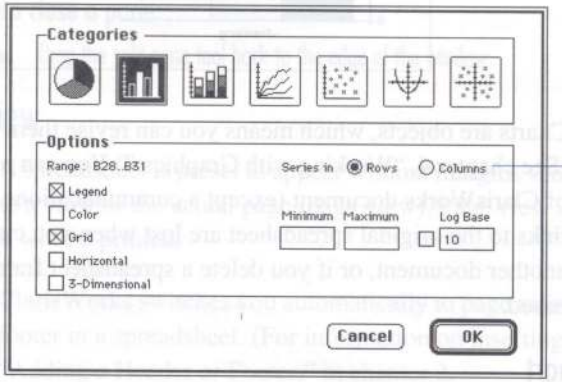
2. **Choose Make Chart from the Options menu.**

   You see the Chart Categories dialog box (figure 5-33). After you have created a chart, you can switch back and forth between a chart and this dialog box to make changes.

3. **Click the type of chart you want to create.**

   Figure 5-33 shows a bar chart selected.

Figure 5-33
Choosing a type of chart



4. **Select the options you want to use for the chart.**

   The options change, depending on the type of chart you select. For details on the options, see the step-by-step instructions in "Revising a Chart," "Working with Pie Charts," and "Working with Bar Charts," later in this chapter.

5. **Click OK.**

   ClarisWorks draws the chart (a graphic object) and inserts it on top of the spreadsheet. Selection handles appear on the corners of the chart.

   Compare the chart on the left in figure 5-34 with the selected range of cells shown on the right. You can see that ClarisWorks has used row titles for the legend and the contents of the top left cell for the chart title.

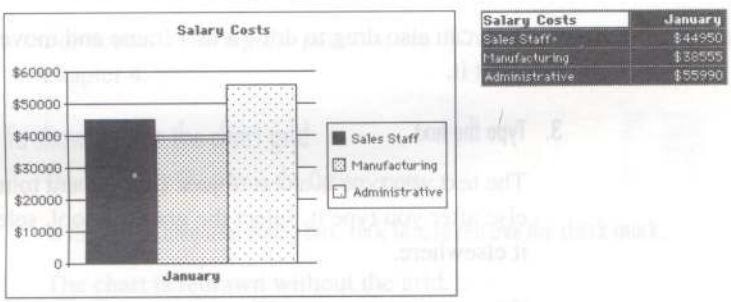


Figure 5-34
Bar chart and selected range of cells

   Any changes you make to the font, size, or style in the spreadsheet appear automatically in the chart.

- **Note** Creating a chart activates graphics menus so that you can immediately edit the chart. You can move the chart or resize it like any other graphics object.

6. **To resume work in the spreadsheet itself, click anywhere in the spreadsheet.**

To open the Make Chart dialog box quickly

- Double-click the chart.

  You can also select the chart and choose Modify Chart from the Options menu.

Revising a Chart

You can make changes to a chart after you create it. Most of the changes described in this section can be made when you first open the Chart Categories dialog box, but you aren't stuck with the first version of the chart you create.

To add text to a chart

1. If necessary, choose Show Tools from the View menu.
2. Select the text tool and click anywhere in the chart to set the text insertion point.

   You can also drag to draw a text frame and move the frame where you want it.

3. Type the text.

   The text you type is a text object. If you want to move the text somewhere else after you type it, select the graphics tool, select the object, and drag it elsewhere.

   When you've completed the chart, you may wish to group text and chart as a single object. For information, see "Combining Objects into a Group," in chapter 2.

To resize a chart

1. Select the graphics tool and click the chart.

   Selection handles appear on the corners.

2. Drag one of the handles to resize the chart.

   You can also rescale the chart to reduce or enlarge it proportionally. For information, see chapter 4, "Working with Graphics."

To change borders or background fill

1. If necessary, choose Show Tools from the View menu.
2. Select the graphics tool and click the chart to select it.
3. Use the pen and fill tools to choose a new pen width, pattern, or color.

   For details, see "Changing Object Appearance," in chapter 4.

To change colors or patterns used for chart elements

1. Show the tools, if necessary, and select the graphics tool.
2. In the legend box, click the legend sample box for the element of the chart you want to change (a slice in a pie, a bar in a chart).
3. Choose a new fill pattern or color, or a new line width, pattern, or color, from the fill and pen palettes.

   For details on using the palettes, see "Changing Object Appearance" in chapter 4.

To show or hide the chart grid

1. Choose Modify Chart from the Options menu.
2. In the Chart Categories dialog box, click Grid to remove the check mark.

   The chart is redrawn without the grid.

To switch from monochrome to color

1. Choose Modify Chart from the Options menu.
2. In the Chart Categories dialog box, click Color to add the check mark.

   If you print with color/grayscale selected in the print dialog box (even with a monochrome monitor), the chart will print in color or grayscale depending upon your printer.

To hide a chart legend

1. Choose Modify Chart from the Options menu.
2. In the Chart Categories dialog box, click Legend to remove the check mark.

   To show the legend, click the box to reinstate the check mark.

To change the scale used for the data series

1. Choose Modify Chart from the Options menu.
2. In the Chart Categories dialog box, type a maximum and minimum for the series.

   To change from a linear to a logarithmic scale, click Log Base and type the log base you want.

   In X,Y scatter charts, you can change the scale for both X and Y axes. For more information on scaling, see "Short Course on Charts," later in this chapter.

Choosing the Right Chart for the Job

You can use the same spreadsheet data to create several different types of charts. When deciding which type of chart to choose, consider the type of data you're presenting and what relationships you want to show.

Pie Charts

Use pie charts to show the relative contribution of a group of values to a total. A pie represents a whole, and each slice represents a portion of that whole.

You can create multiple pies that show the relative size of two or more data samples. For example, you could create two pies to show Macintosh versus Apple II software sales, with each pie showing a breakdown by category of software.

Bar Charts

Use bar charts to show information about relative quantities. Bars standing side by side (or, in a horizontal chart, laid out in a stack) make quick comparisons easy.

Line Charts

Use line charts to show how values change over time. The ups and downs of line charts have their own language in stock markets, where upward and downward trends are easy to spot.

Scatter Charts

Use scatter charts when you want to show discrete points of data without indicating any relationship among the points. Scatter charts are also useful when you have a set of data points and want to look for commonality among, or grouping of, points in the data series.

Working with Pie Charts

A pie chart represents a whole, and each slice in the pie represents a portion of the whole. To emphasize the parts, or slices, you can create a single pie chart by selecting only one series of data and its accompanying legend. You can also select multiple series and create a chart that shows several pies, each relative in size and divided into the slices that represent the data series.

To scale multiple pies

1. Select a range of cells to create more than one pie, as shown in figure 5-35.

Figure 5-35
Selecting for multiple pies

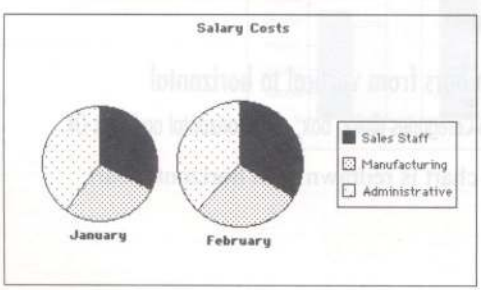
Salary Costs	January	February
Sales Staff	44950	57890
Manufacturing	38555	47900
Administrative	55990	65890

2. Choose Make Chart from the Options menu.
3. In the Categories dialog box, click Scale Multiple Pies.
4. Click OK.

   ClarisWorks draws the pies, setting their sizes to show the relative contribution of each set of data to the total (figure 5-36).

Figure 5-36
Scaled multiple pies showing relative values

More money was spent in February, so the pie is larger.



To explode a slice of a pie chart

- Hold down Option as you click the legend for the slice you want to explode.

The chart is redrawn with the exploded slice.

To return an exploded slice to a pie

- Hold down Option as you click the legend for the slice you want to return to the pie.

The chart is redrawn with the slice incorporated into the pie.

To show percentages

- In the Categories dialog box, click Show Percentages and then click In Legend or In Slice.

The percentages are added to the legend (figure 5-37) or each slice.

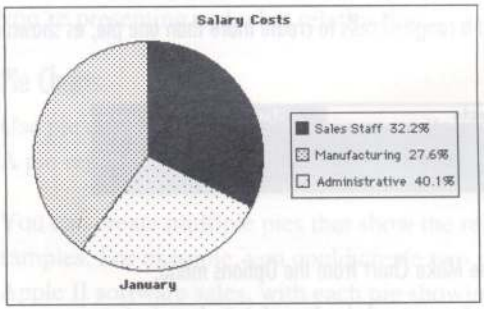


Figure 5-37
Percentages in a pie chart

Working with Bar Charts

You can create bar charts with vertical bars, horizontal bars, and even three-dimensional bars. You can change the scale and other attributes of a bar chart by using the methods described in "Creating a Chart," earlier in this chapter.

To switch bars from vertical to horizontal

- In the Categories dialog box, click Horizontal and click OK.

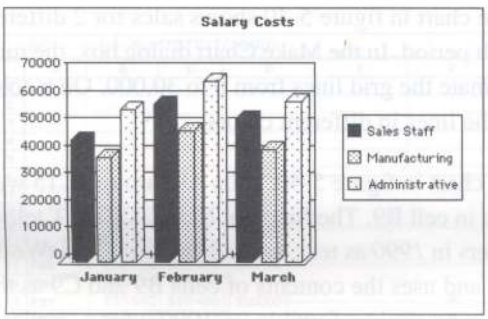
The chart is redrawn with horizontal bars.

To make bars three dimensional

- In the Categories dialog box, click "3-Dimensional."

The chart is redrawn with three-dimensional bars (figure 5-38).

Figure 5-38
A three-dimensional bar chart

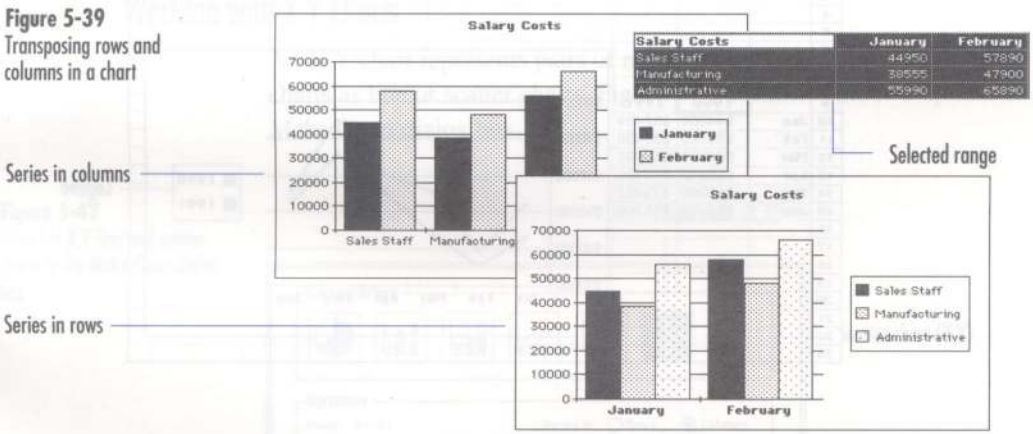


To change the series from rows to columns (or vice versa)

- In the Categories dialog box, click "Series in" columns or rows and click OK.

The chart is redrawn as specified (figure 5-39).

Figure 5-39
Transposing rows and columns in a chart



Working with Line Charts

When you create a line chart, ClarisWorks plots the various data points and connects the points in a single line. As noted, a line chart is useful when you want to show changing or comparative trends over a period of time.

The line chart in figure 5-40 shows sales for 2 different years plotted over a 6-month period. In the Make Chart dialog box, the minimum was set at 30,000 to eliminate the grid lines from 0 to 30,000. On a color monitor, ClarisWorks draws the lines in different colors.

For the chart in figure 5-40, cells A9 through C15 were selected. Notice the formula in cell B9. The function NUMTOTEXT tells ClarisWorks to treat the characters in *1990* as text, not as numbers. ClarisWorks then ignores the blank cell A9 and uses the contents of cells B9 and C9 as the legend. You can use quotation marks in a formula (="1990") for a similar effect.

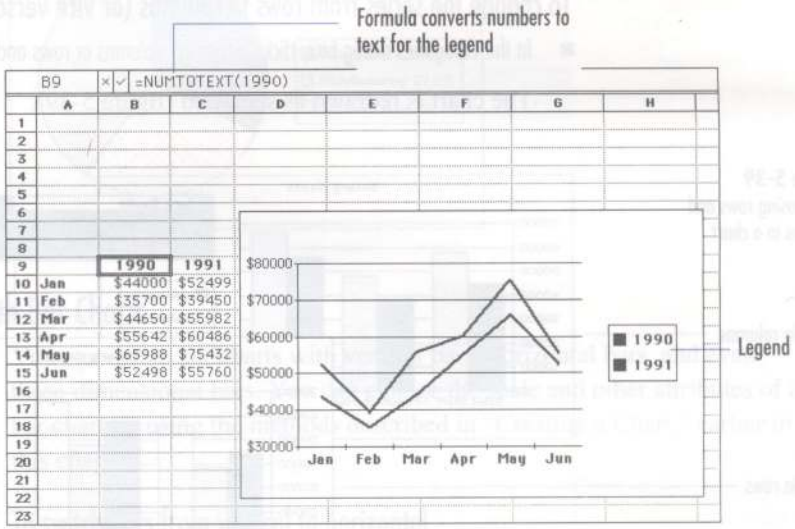
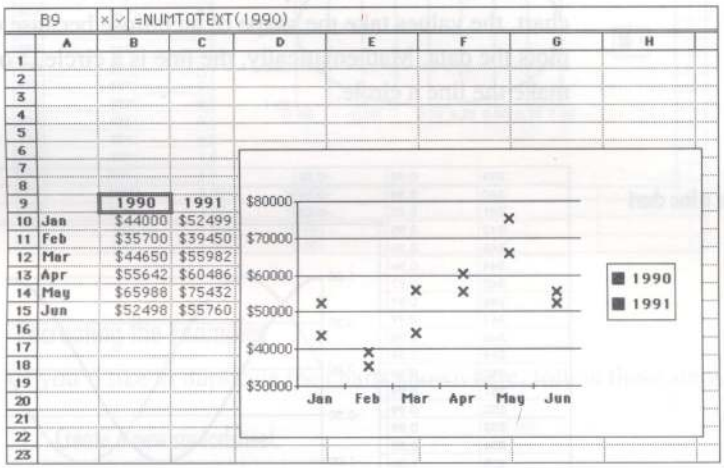


Figure 5-40
Sales for 2 years plotted in a line chart

Working with Scatter Charts

In a scatter chart, ClarisWorks plots discrete points using "x" symbols for the data points. Figure 5-41 shows a scatter chart of the sales data used in figure 5-40.

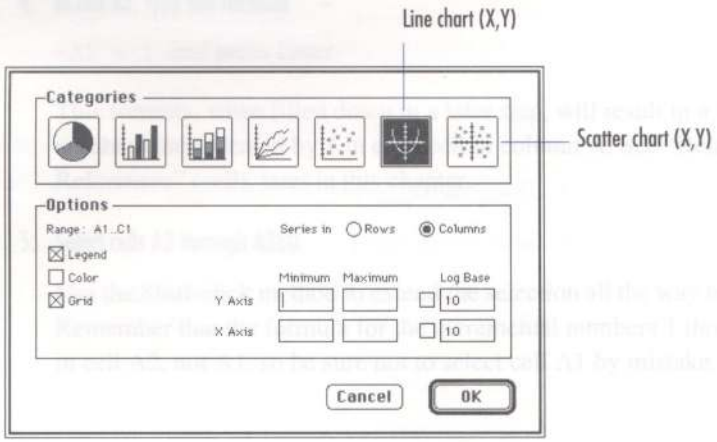
Figure 5-41
Sales for 2 years plotted in a scatter chart



Working with X,Y Charts

An X,Y chart represents pairs of numbers in a range. You can generate X,Y charts as line or scatter charts. Figure 5-42 identifies the two options in the Make Chart dialog box.

Figure 5-42
Icons for X,Y line and scatter charts in the Make Chart dialog box



X,Y charts are used extensively for engineering and mathematical work. Figure 5-43 shows sine and cosine functions plotted in a standard line chart. Figure 5-44 shows the same values plotted in an X, Y line chart.

Comparing Line and X,Y Charts

In the standard line chart, you see the classic sine wave pattern. In the X,Y chart, the values take the shape of an ellipse because of the way ClarisWorks plots the data. Mathematically, the line is a circle. You can resize the chart to make the line a circle.

Figure 5-43
Sine functions in a line chart

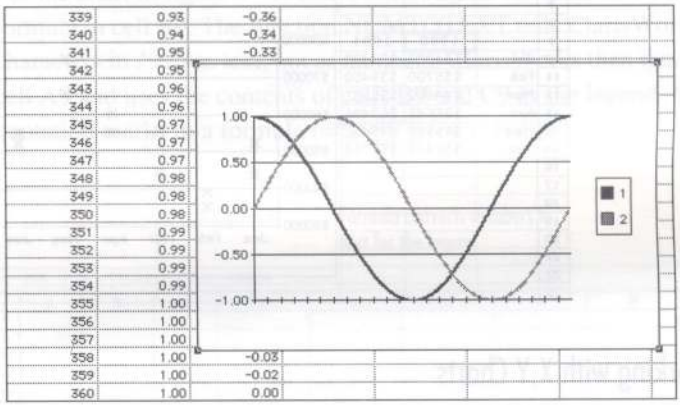
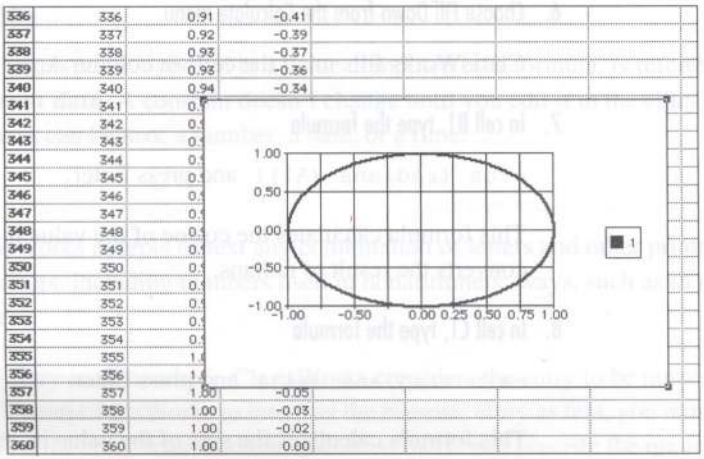


Figure 5-44
Sine and cosine functions in an X,Y line chart



336	336	0.91	-0.41
337	337	0.92	-0.39
338	338	0.93	-0.37
339	339	0.93	-0.36
340	340	0.94	-0.34
341	341	0.9	
342	342	0.9	
343	343	0.9	
344	344	0.9	
345	345	0.9	
346	346	0.9	
347	347	0.9	
348	348	0.9	
349	349	0.9	
350	350	0.9	
351	351	0.9	
352	352	0.9	
353	353	0.9	
354	354	0.9	
355	355	1.0	
356	356	1.0	
357	357	1.00	-0.05
358	358	1.00	-0.03
359	359	1.00	-0.02
360	360	1.00	0.00

Recreating the Examples

If you'd like to duplicate the charts shown here, follow these steps.

1. **Create a new spreadsheet.**
2. **Select the column headers of columns B and C and change the number format to Fixed, with a precision of 2.**
3. **In cell A1, type the number 1.**

   This is the first number in the series 1 to 360. ClarisWorks can fill in the rest of the series for you, as shown in later steps.

4. **In cell A2, type the formula**

   `=A1 + 1` and press Enter.

   This formula, when filled down in a later step, will result in a series of numbers incremented by 1 in each cell in column A. See "Relative References" (cell), later in this chapter.

5. **Select cells A2 through A360.**

   Use the Shift-click method to extend the selection all the way to cell A360. Remember that the formula for the incremental numbers 1 through 360 is in cell A2, not A1, so be sure not to select cell A1 by mistake.

6. **Choose Fill Down from the Calculate menu.**

   ClarisWorks fills in all the cells in column A.

7. **In cell B1, type the formula**

   `=cos (radians (A1))` and press Enter.

   This formula calculates the cosine of the value in cell A1 (in degrees) and converts the result to radians.

8. **In cell C1, type the formula**

   `=sin (radians (a1))` and press Enter.

   This formula calculates the sine of the value in cell A1 (in degrees) and converts the result to radians.

9. **Select cells B1 through C360.**

   As a shortcut, you can choose Go To Cell from the Options menu. Type the cell address, C360, to move immediately to that cell. If you have an extended keyboard, press Home and Shift-click cell B1. Or, use Go To Cell to get to cell C360, hold down Shift, drag the scroll box to the top, and click cell B1.

10. **Again choose Fill Down from the Calculate menu.**

    ClarisWorks fills the formulas into the rest of the cells in columns B and C and displays the results. You're now ready to chart the sine and cosine functions.

11. **Select cells B1 through C360, if not already selected.**

    This action selects all the data in columns B and C, down to the end of the data in cells B360 and C360.

12. **Choose Make Chart from the Options menu.**

13. **Select the line chart or X,Y line chart icon (figure 5-42, above), and click OK.**

    ClarisWorks draws the chart as specified.

Short Course on Data Types

Data you type, as opposed to a value computed by a formula, is referred to as **constant data.** A constant doesn't change until you edit it in the entry bar. A constant can be text, a number, a date, or a time.

Text

ClarisWorks accepts as text any combination of letters and other printable characters, including numbers used in nonarithmetic ways, such as in a street address.

If an entry is all numbers, ClarisWorks considers the entry to be numeric, not text. To tell ClarisWorks to interpret the numeric entry as text, you must begin and end the entry with a double quotation mark, and precede the quoted text with an equal sign (= "1992") or, use the NUMTOTEXT function.

Numbers

You can enter a positive or negative number. Begin a negative number with a minus sign (–). ClarisWorks interprets dates and times as numbers.

For information on number formats, see "Changing the Appearance of a Spreadsheet," earlier in this chapter.

Date Serial Numbers

All dates are stored as serial numbers. Any date you enter is converted to the number of days that have elapsed since January 1, 1904. For example, if you enter July 6, 1992, ClarisWorks stores the serial number (32329). The formatted number shows in the cell, not the serial number. To display a date serial number, use the General format (see "Setting the Format for Numbers," earlier in this chapter).

- **Dates Before January 1, 1904** ClarisWorks treats times and dates before January 1, 1904, as negative numbers.

Time Serial Numbers

ClarisWorks stores all times as serial numbers that represent the time as a decimal fraction of the whole day. For example, 20:30 (8:30 PM) is stored as

0.85. The formatted time, not the serial number, shows in the cell. To display a time serial number, use the General format (see "Changing the Appearance of a Spreadsheet," earlier in this chapter).

A single number can represent an exact date and time.

Short Course on Number Formats

Number formats change the way numbers appear on the screen and when you print. Table 5-1 describes the effects of options you select in the Number Format dialog box (Number command, Format menu).

Number Options

Table 5-1 describes number formats.

Table 5-1
Number Formats Described

Format	Example	Description
General	43.6666	ClarisWorks adds a floating number of decimal places to the right of the decimal point. Trailing zeroes to the right of the decimal point are dropped. For example, 0.54 and 0.5400 appear as 0.54. The number 54.00 appears as 54. If the number doesn't fit into a cell as a fixed number, ClarisWorks tries to represent the number in scientific notation. If the number still won't fit, the cell is filled with pound signs (#####).
Currency	$43.67	ClarisWorks puts a currency symbol next to the number. The preset precision is two decimal places, but you can change it.
Percent	4367.00%	Numbers are displayed as percentages. ClarisWorks multiplies the number you enter by 100 and displays it in a fixed decimal format with the precision you set. The number 5 appears as 500%, and the number .5 as 50%.
Scientific	4.37e+1	ClarisWorks displays entries as exponential powers of 10. The precision (set in the Precision box) applies to the mantissa of the value displayed. For example, if you set the precision at 2, the number 1000000 appears as 1.00e + 6 (1.00 multiplied by 10 to the power of 6).
Fixed	43.67	ClarisWorks rounds numeric entries to a fixed number of decimal places. The preset number of decimal places is two. You can change the number in the Precision box of the Number Format dialog box.

Commas and Parentheses

The Commas option inserts comma separators when ClarisWorks displays thousands. The "Negatives in ( )" option puts negative values in parentheses and hides the minus sign.

Precision

The way you set the Precision option for numeric values determines how many digits are displayed to the right of the decimal point. ClarisWorks is preset to supply two decimal places for Fixed, Currency, and Percentage formats. For numbers using the Scientific format, the precision applies to the mantissa.

The General format uses a floating-point precision and hence is not affected by the Precision setting. Date and time formats are also not affected.

When you set Precision, you can specify up to 15 decimal places.

Dates and Times

Date and time options show how data formatted for date or time will appear in a cell. For example, the format Mon, Jul 15, 1991 supplies the day of the week and month name, both abbreviated to three characters.

The format 5:20 PM produces a time in the format Hours:Minutes, on a clock divided into 12-hour blocks (AM and PM). The format 17:20 and 17:20:15 produces times based on a 24-hour (international) clock.

Short Course on Formulas

This section gives a brief introduction to the way formulas work in a spreadsheet. Inexperienced users may find the section helpful in understanding how formulas are built, how they are used, and the kinds of results they produce.

Types of Results

When working with formulas, be aware of the types of results to expect. For example, if you subtract a time from a time (times are numbers), the result will be a number. A formula that counts characters in a text expression will also have a numeric result.

Results of a formula can be one of the following types:

Text
Number (including dates and times)
Boolean
Errors

Parts of a Formula

Operators and Operands —Operators are symbols that define the action to be performed. Familiar examples are the plus sign (+) and minus sign (-). Operands are the elements acted on. They are most often numeric values or text strings. In the equation 2 + 3 = 5, the 2 and the 3 are operands.

Simple Formulas —A simple formula might be a series of numbers joined by operators. For example, if you enter the formula = 2 + 3 + 5 in cell B5, ClarisWorks adds the three values. After you confirm the formula, the result—10—appears in cell B5.

Functions and Cell References —A formula can also use cell references and predefined formulas called functions. For example, in cell B5 you can enter this formula:

```
=SUM (A1..B4)
```

After you confirm the formula, ClarisWorks uses the predefined function (SUM) to add the contents of the range of cells A1 through B4. The result appears in cell B5.

Types of Operators

You can use three types of operators in ClarisWorks formulas: numeric, text, and relational operators.

Numeric Operators

Numeric operators perform arithmetic computations on numeric data. These operators are

+ addition
– subtraction
* multiplication
/ division
^ exponentiation

Text Operator

ClarisWorks has one text operator: & (ampersand). You use the text operator to join text expressions, also called text strings. Quotation marks should be used to surround a text expression.

For example, suppose a city, Anytown, is in cell A2, and a state name, Any State, is in cell A3. You want to join the two in a text expression in cell B6. In cell B6 you would type

```
=A2 & ", " & A3
```

Note the comma and the space, added by you, after cell A2. ClarisWorks sees the comma and interprets it as text because it is within the quotation marks. The result is

```
Anytown, Any State
```

Relational Operators

Relational operators express a relationship between two operands. Both the operands must be text, or both must be numbers (dates and times, which are formatted numbers, work as well). Relational operators are

= equal to
> greater than
≥ greater than or equal to
< less than
≤ less than or equal to
<> Not equal to

Formulas that use relational operators make a statement, and ClarisWorks evaluates the statement to see if it is TRUE or FALSE. For example, if cell A1 contains the number 345, and cell B1 contains the number 678, the formula

```
= A1 < B1
```

gives a TRUE result, and TRUE appears in the cell that contains the formula.

When you use relational operators to compare text values, ClarisWorks looks at the ASCII values of the text characters.

Precedence

Precedence is the order in which calculations are performed when a formula has more than one operator. ClarisWorks acts on an operator with a higher level of precedence before it acts on one with a lower level. If two operators have the same level of precedence, ClarisWorks performs the calculation left to right (table 5-2).

Table 5-2
Precedence of operators

Operator		Level of precedence
%	(division by 100. Example: 57% =.57)	7
^	(exponentiation)	6
+,-	(sign)	5
*,/	(multiplication, division)	4
+,-	(addition, subtraction)	3
&	(text operation)	2
=, >, >=, <, <=, or <>		1

For example, the formula

```
= 3 + 4 * 5
```

produces 23 because 4 and 5 are multiplied (level 4) before 3 is added (level 3).

To change the precedence of operators within a formula, enclose items in parentheses to give them higher priority. When parentheses are nested within other parentheses, the innermost level receives the highest priority. Evaluation proceeds from left to right.

```
=(3 + 4) * 5
```

produces 35.

```
=((3 + 4) * 5) * 4
```

produces 140.

Cell References in Formulas

A formula can contain references to a cell or a range of cells. ClarisWorks uses the contents of these cells to compute the formula.

Relative References

A **relative reference** gives the location of a cell relative to the location of the current cell. If you're entering a formula in cell B2, for example, and you use a reference to cell C4, you're telling ClarisWorks to get the value from the cell one column to the right and two rows down.

If you copy or move a formula with a relative reference to another cell, ClarisWorks changes the reference to reflect the relative position from the new source cell. If cell B2 contains a reference to cell C4, and you copy that reference into cell E3, the reference changes from C4 to F5—still one column over and two rows down from the source cell.

Absolute References

An **absolute reference** doesn't change when you copy and paste a formula. To tell ClarisWorks not to change the cell reference, you type a dollar sign ($) before each part of the cell address: C4 indicates a fixed column (C) and fixed row (4).

When you move a cell to a different location, as opposed to copying and pasting them, ClarisWorks adjusts absolute cell references to that cell.

Mixed References

A **mixed reference** contains both relative and absolute cell references. For example, the reference $C3 indicates an absolute column but a relative row location. The reference C$3 indicates a relative column but absolute row location.

Entering Cell References

Single cell —You can enter a reference to a single cell by typing the cell address. Or, you can click the cell and ClarisWorks will insert the address. If you click a cell to put it in a formula, the cell reference appears at the insertion point in the formula.

Range —For a range of cells, you can type the addresses of the range's two anchor cells—the cell at the upper left of the range and the cell at the lower right with two dots between them (..). Or, you can drag through the range. If you drag through a range, the range reference appears at the insertion point in the formula. Two dots (..) between the first and last cell references indicate that a range was selected.

Simple Addition

You can click more than one cell in a formula without specifying an operator. ClarisWorks inserts the plus sign (addition) between the cell references.

Multiple References

You can use more than one cell reference or range in a formula. For example, the formula

```
= AVERAGE (D12, A16..A20)
```

adds the values in cells D12 and in cells A16 through A20 and computes the average.

Circular References

A **circular reference** occurs when two or more cells refer to each other (for example, A1 = B2 * 3 and B2 = A1 + 4) or a cell refers to itself: A10 = Sum (A1..A10). Circular references can get complex, with several calculations in the middle, so you may not immediately realize that one calculation depends on another. You may want to rethink the layout of the spreadsheet to avoid circular references.

To help you find circular references, ClarisWorks is preset to mark cells that contain them. These cells are surrounded by bullets (dots). You can turn the markings off in the Display dialog box (Display command, Options menu).

Short Course on Functions

ClarisWorks provides numerous capsule formulas called **functions.** These formulas allow you to perform routine computations—such as summing up a group of numbers or deriving a square root—without having to type the whole formula. Instead, you insert the function name into a formula and ClarisWorks provides the computation automatically.

Functions can speed up your work and also spare you the effort of remembering a formula you've long since forgotten—such as the formula for computing a standard deviation. See Appendix A, "Using ClarisWorks Functions," for a complete list of functions.

Arguments (Values)

Most functions need values to act on. You supply the values, called **arguments,** either as constant values or in the form of cell references.

Arguments (values) are always enclosed in parentheses. Multiple arguments are separated by commas. For example, in the formula

```
=SQRT (56884)
```

SQRT is the function name and 56884, a constant value, is the argument.

In the formula

```
=SUM (A1..B6)
```

SUM is the function name and the cell range reference A1..B6 is the argument.

Constants

Functions such as NOW() and PI() work as constants. PI() always produces the number π, and NOW() always produces a serial number for the current date and time. (For details on serial numbers, see "Date Serial Numbers" and "Time Serial Numbers," in "Short Course on Data Types" earlier in this chapter.)

Types of Functions

Functions are listed alphabetically in the Paste Functions dialog box. You can select a function by typing the first letter(s) of the function's name. Functions fall into eight general categories:

Business and Financial —Common business functions used to calculate mortgage and payment values

Date and Time —Functions used for manipulating dates and times, such as converting dates to text or getting the current date or time

Logical —Functions used to evaluate Boolean expressions

Numeric —Functions used for general mathematical computations

Information —Functions that look up and evaluate information in spreadsheet cells and ranges and in databases

Statistical —Functions used for general statistical calculations such as standard deviation and variance

Text —Functions used for finding, comparing, and manipulating text expressions

Trigonometric —Functions dealing with arcs and angles

See Appendix A, "Using ClarisWorks Functions", for a complete list of functions.

Short Course on Charts

The purpose of most charts is to convey relationships among different sets of data. For example, a typical bar chart might show expenses by category, with the bars representing the expenses per category (figure 5-45).

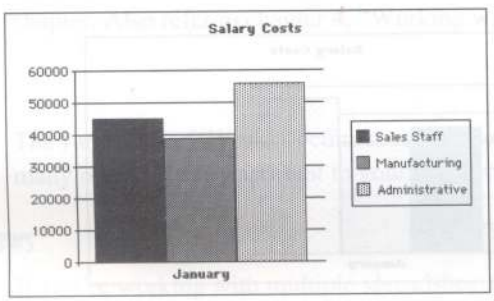


Figure 5-45
Expenses by category

Choosing the Best Scale

The impact of values pictured on a chart can often be completely changed by changing the scale against which the values are shown. For example, on a linear scale of 1 to 10, a value of 2 looks small. If you change the scale to a range of 1 to 5, the value 2 appears much more important.

You can change the minimum and maximum for the range of values shown on the axis of a chart. You can also convert the scale to a logarithmic scale to emphasize orders of magnitude (as is done in earthquake measurements). See "Revising a Chart," earlier in this chapter, for information on setting scales.

Parts of a Chart

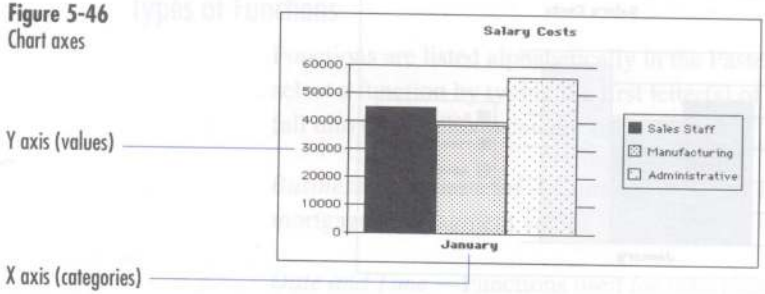
Each chart contains at least one **data series,** which represents a set of values from the spreadsheet. In figure 5-45, the data series is represented by the vertical bars that indicate expenses in dollars.

A chart also contains **divisions,** which represent intervals or categories from the spreadsheet. Divisions represent columns or rows. In figure 5-45, the divisions consist of three types of salary expenses.

Axes

Most charts have two **axes**—straight lines used to measure and compare data (figure 5-46). Values are usually arrayed along the Y (vertical) axis of the chart. Divisions are usually arrayed along the X (horizontal axis). Pie charts have no axes.

Figure 5-46
Chart axes



Remember that you can use the Make Chart dialog box to quickly transpose columns and rows for a different chart view.

Text

Legends indicate the different divisions of data on a chart. ClarisWorks reads the legend for a category from the first cell in each division. For a data series, the text in the first cell in each series is used. For an illustration of how this works, see "Working with Bar Charts," earlier in this chapter.

ClarisWorks derives a **chart title** from any text in the cell at the upper-left corner of the chart range. Any changes you make to text font, size, or style are reflected in the chart when you create it.

You can add additional explanatory text to the chart by using the text tool. Remember that a chart is a graphic object. When the chart is selected, all the graphics tools are active.

Label Overruns

If text in a cell is too long to fit into a legend, ClarisWorks displays only as much as will fit. You can shorten the text in the cell and redraw the chart, or you can use the text tool and type a new legend.

Color

ClarisWorks is preset to display a data series in different colors, depending on your monitor. On a monochrome monitor, the data series appears in different patterns.

For information on changing colors, see "Revising a Chart," earlier in this chapter. Also refer to chapter 4, "Working with Graphics."

Covered Elsewhere

The various ClarisWorks document types share common methods and features, many of which are important to your work with spreadsheets.

Multiple Views

If you're working with multiple spreadsheets, you may want to tile and stack windows. For information, see "Changing Your View of a Page," in chapter 2.

Adding Automatic Page Elements

You can automatically insert page numbers, the current date and time, headers, and footers. These elements work the same way in all ClarisWorks documents. See "Working with Pages," in chapter 2.

Checking Spelling

The spelling checker works the same way in all ClarisWorks documents except communications. See "Using the Spelling Checker," in chapter 2.

Chapter 6

Working with Databases

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Chapter 6

Working with Databases

This chapter gives step-by-step instructions for using database documents and working in the ClarisWorks database environment.

Technical functions used in the database are mostly the same as those for the spreadsheet (see the appendix, "Short Course on Functions," and other topics in chapter 5).

An Overview

A **database** is a collection of information (data). Examples of information collected and stored in a database are a catalog of parts or books, a collection of recipes, or a list of names and addresses. A familiar non-electronic database is a telephone directory.

To organize a database, you use database management software like that provided in the ClarisWorks database environment. In a ClarisWorks database document, you can create records, organize them, sort them, and print reports in various layouts.

For brevity, both databases and database management software are usually referred to as databases.

Records

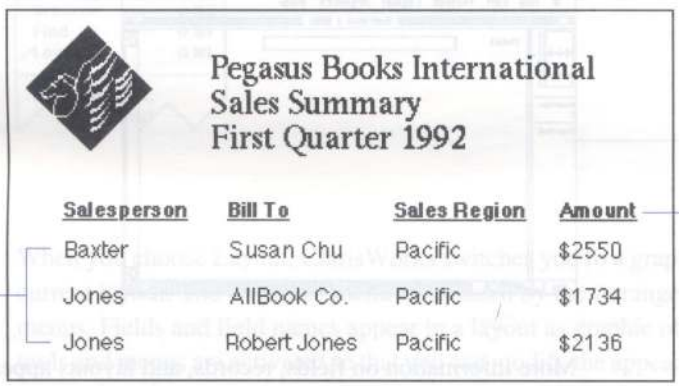
A **record** is a collection of data about a single product, activity, or transaction.

A typical printed form corresponds to a record. For example, a sales form contains all the information about one transaction: the customer's name, the item sold, the price, and other relevant data. In a cookbook, each recipe contains the recipe name, the ingredients needed, and instructions for preparing the food. In a mailing list, each record contains a name and address.

Fields

Fields are building blocks for records. Fields contain the data you want to store, find, sort, and print. Fields also represent the categories of information you store. For example, if a database contains a list of names and addresses, then names represent one category and addresses another (figure 6-1). Each record has a name field and an address field where you enter the data you want to store.

Figure 6-1
Database records



Field Definitions

A **field definition** consists of a field's name and additional attributes, such as the type of data the field can contain. A field definition determines the sort of work you can do with a field. For example, you can define a field to hold only numbers, or you can define it to perform a calculation based on the contents of other fields.

Layouts

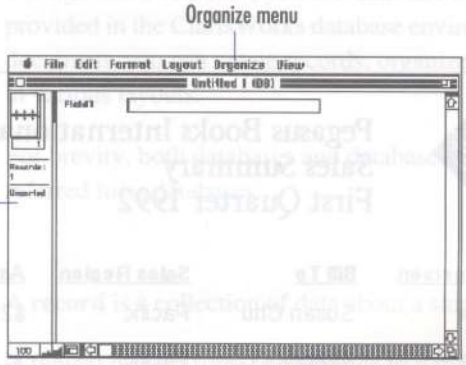
Layouts determine the way data appears when you use the Browse command, Find command, and when you print.

The ClarisWorks application gives you great flexibility in the way you organize, enter, view, and print the data in your records. You can create several different layouts for the same database, using the same information but changing the way it appears and the way it is organized. For example, you can create a layout for mailing labels, a layout for a telephone directory, and a layout for a report.

About New Database Documents

Until you add fields, a new ClarisWorks document contains one preset field and one blank record. A standard layout is supplied, with fields and field labels stacked vertically in the layout. Figure 6-2 shows a new database document in the database environment.

Figure 6-2
New database window



More information on fields, records, and layouts appears later in this chapter. For instructions on creating new documents, see chapter 2, "Working with Documents."

Working in Browse, Find, and Layout

In a database document, you work with data and layouts in three different ways, using the Browse, Find, and Layout commands from the Layout menu (figure 6-3). In Browse and Find, the status panel gives information about records (figure 6-2). It's replaced by the tool palette when you're using the Layout command.

Browse

When you choose Browse, you can add and sort records, find and match records, enter data, and do the usual editing tasks. Records are displayed in Browse according to the current layout. You can work with one record at a time on the screen or view your records as a list. See "Working with Fields" and "Working with Records," later in this chapter.

Find

When you choose Find, ClarisWorks switches you to a blank view of the current layout. The blank view is called a **find request.** The status panel at the left of the window changes to include Find and Omit buttons. You use a Find request to search for records containing certain data you specify. For information, see "Finding Records," later in this chapter.

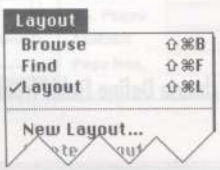


Figure 6-3
Choosing browse, find or layout

Layout

When you choose Layout, ClarisWorks switches you to a graphics view of the current layout. The Organize menu is replaced by the Arrange and Options menus. Fields and field names appear in a layout as graphic objects. Graphics tools and menus are activated so that you can modify the appearance of a layout by moving objects around or by adding new graphics or layout text. You can also use layouts to organize the data in a document. For information, see "Working with Layouts," later in this chapter.

◆ **Note** Layout is a menu and also a command in the Layout menu.

To switch between Browse, Find, and Layout

- Choose the command you want from the Layout menu.

  Or,

- Use the command-key equivalent shown to the right of the command name: press Command-Shift-B for Browse, Command-Shift-F for Find, or Command-Shift-L for Layout.

Working with Fields

To set up a field for the work you want it to do, you must name the field and specify a field type. The name and field type make up the **field definition.**

The following steps show only the mechanical requirements for defining a field. For details, see "Short Course on Field Types," later in this chapter.

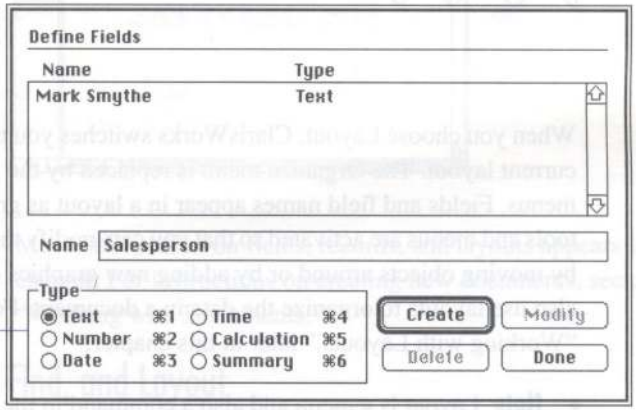
Creating a New Field

When you open a new database document, the Define Fields dialog box opens automatically so you can create new fields (figure 6-4). You can also add a new field later.

To define a new field

1. **Create a new database document or choose Define Fields from the Layout menu.**

Figure 6-4
Defining a new field



2. **In the Name box, type a name for the field.**

   A field name can be up to 63 characters long.

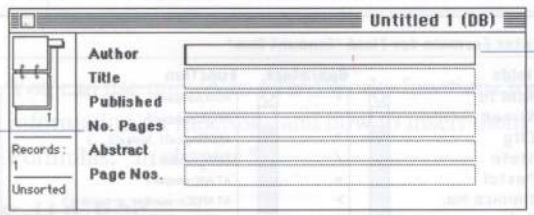
3. **Click a field type, and then click Create.**

   The name box remains selected and ready for you to type another field name, choose a field type, and create the next field. If you create a calculation field, the Calculation dialog box opens. For information on creating a calculation field, see "Creating a Calculation Field," following these steps. For information on field types, see "Short Course on Field Types," later in this chapter.

4. **When you have finished creating fields, click Done.**

   The dialog box closes. The new fields appear in a standard layout, with all fields and field names stacked vertically (figure 6-5).

Figure 6-5
New standard layout



5. **To enter data, click anywhere in a field and type, tabbing to the next field when the entry is complete.**

   Press Shift-Tab to move to the previous field in the tab order.

   For more information on data entry and tab order, see "Typing Data in a Field" and "Changing the Tab Order," later in this chapter.

Creating a Calculation Field

You define a calculation field by entering a formula that will compute the result you want. For example, if an invoice record contains fields called Unit Price and Quantity, you can create a calculation field called Amount Due and enter a formula that multiplies Unit Price by Quantity. The result will appear in the Amount Due field.

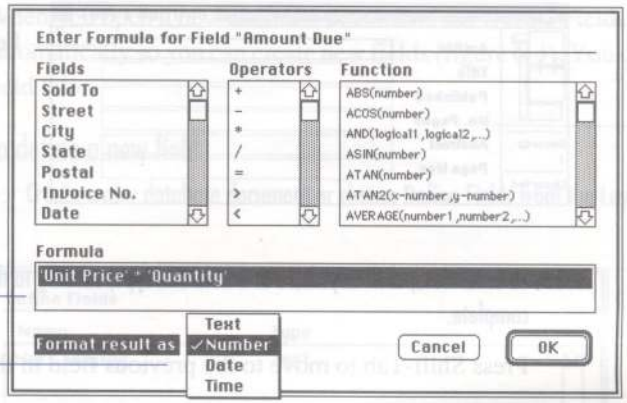
To create a calculation field

1. **Choose Define Fields from the Layout menu.**

2. **In the Define Fields dialog box, name a new field, click Calculation, and then click Create (or select an existing field name, click Calculation, and then click Modify).**

   The Calculation dialog box opens (figure 6-6).

Figure 6-6
Creating a formula



Formula entry box

Pop-up menu for formula result type

3. **Enter a formula by clicking field names, operators, and functions.**

   You can type a field name, but you must be exact. It is best to click the field name and let ClarisWorks enter it for you.

   You can press Command-C to copy and Command-V to paste a calculation formula from a spreadsheet or from another source.

- **If You Type a Formula** When you click a field name to enter it in a formula, ClarisWorks automatically inserts a single quotation mark (') at the beginning and end of the name. If you type a field name in a formula, you must add the quotation marks.

4. **Choose the type of result you want from the "Format result as" pop-up menu.**

5. **Click OK to confirm the formula and return to the Define Fields dialog box.**

   ClarisWorks checks the formula and alerts you if you have made errors. If there are no errors, ClarisWorks computes the result for that field in every record in the document.

   The formula now appears to the right of the field name in the list of fields.

6. Click Done.

More about formulas

If you're new to formula-building, refer to "Short Course on Formulas," in chapter 5. You create formulas in the database the same way you do in a spreadsheet.

You can use numerous ClarisWorks functions for database formulas. For information on functions and how to insert them in a formula, see "Entering Formulas," in chapter 5.

Changing a Field Definition

You can easily change a field name, field type, or formula. If you have already entered data into a field, be careful when you change the field definition. For example, changing the formula in a calculation field causes the results to change in every record.

To change a field definition

1. Choose Define Fields from the Layout menu.
2. In the Define Fields dialog box, select the name of the field you want to change.

   The field name appears in the name box.

3. Edit the name or change the field type, and then click Modify.

   The list is updated to show the new name or field type. If you selected a calculation field, or if you changed a field to a calculation field, the Calculation dialog box opens when you click Modify. You can revise the formula in the dialog box, as described in "Creating a Calculation Field," earlier in this chapter.

◆ **Caution** If you change field type, you will lose any data (in the field) that can't be converted.

More about changing a field definition

When you change a text field to a number, date, or time field, ClarisWorks puts the data on one line, deleting any data after the first 254 characters. This is because number, date, and time fields must be on one line and are limited to 254 characters. Date and time fields must contain dates and times.
See "Short Course on Field Types," later in this chapter.

To delete a field completely

1. **In the Define Fields dialog box, select the name of the field you want to delete.**
2. **Click Delete.**

   After asking for confirmation, ClarisWorks completely removes the field and all its data.

◆ **Caution** Be careful when you delete a field. You're erasing all data from the field, in all records, and you're erasing the field itself from all layouts.

More about deleting fields

You can remove a field from a particular layout without affecting other layouts or the rest of the document. If you want to remove a field from the layout, but not from the document, *do not delete the field in the Define Fields dialog box.* Information on removing fields from layouts appears in "Adding and Deleting Fields in a Layout," later in this chapter.

Typing Data in a Field

Only one record at a time is active in a database document. Similarly, only one field can be selected at a time. To type data in a field, you must first activate the record and then select the field. Also, you must be in Browse or Find. If you don't see the expected arrangement of fields, you may have more than one layout for the file. Check the bottom of the Layout menu to see which layout you're using.

You can't type in Calculation or Summary fields. ClarisWorks computes the results and fills the fields.

A database document is preset to show records in a list, one below the other on the screen. The current record is marked by a solid bar on the left when Page View is not on. To view records one at a time, deselect List View on the Layout menu (see "Viewing Records as a List," later in this chapter).

You can enter data with Page View switched on or off. With Page View on, you see records within the page guides as they will be printed. With Page View off, you see only the current record, or list of records if List View is checked. For information on Page View, see "Your View of a Page," in chapter 1.

To activate a record and select a field

- In Browse, click a field in the record.

  ClarisWorks activates the record and selects the field. A solid border indicates that the field is selected (unselected fields have dotted or solid gray borders). Tabbing to a field also selects the field.

  For directions on creating new records and moving from record to record, see "Creating a New Record" and "Moving from Record to Record," later in this chapter.

To type in a text field

- Type any characters you want.

  Numbers typed in a text field are treated as text.

To place a tab without moving to the next field

- Press Command-Tab to enter a tab within a field.

To type in a number field

- Type any number you wish.

To type a date or time

- Type the date or time as numerals, in the format set for the field.

  To verify the format, switch to Layout and double-click the date or time field to open the Date or Time Format dialog box. For more information, see "Changing the Way You Express Numbers, Dates, and Times," later in this chapter.

To enter the current date or time

- Type Command-hyphen.

To edit text in a field

- Use standard text-editing methods:

  To delete a character, place the insertion point to the right of the character, and then press Delete. To replace a block of text, drag through the text to select it and then type the replacement.

To copy or move data from one field to another

1. Select the field contents you want to copy or move.
2. Choose Cut or Copy from the Edit menu.

   Copy places a copy of the field contents on the Clipboard, leaving the original intact. Cut removes the selection and places it on the Clipboard.
3. If necessary, move to the record in which you want to paste the data.
4. Select the field you want, and choose Paste from the Edit menu.

   A copy of the data is pasted into the field.

Working with Records

When you have defined and worked with the fields you need, you can begin adding and working with records.

Creating a New Record

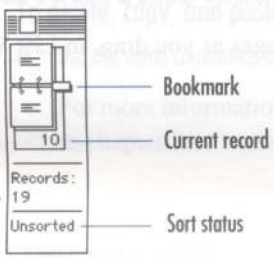
You will need a new record for each person, transaction, project, or the like, that you want to track in the database document.

To create a new record

- In Browse, choose New Record from the Edit menu, or press Command-R.

ClarisWorks creates a new record, displays it in the current layout and adds one record to the book in the status panel (figure 6-7). The text insertion point is set in the first field. You can start typing there or tab to another field.

Figure 6-7
Database status panel



To create a duplicate record

- In Browse, choose Duplicate Record from the Edit menu, or press Command-D.

ClarisWorks creates a duplicate of the current record and adds a record to the book. This is useful if records are similar; you can change the fields that are different and avoid retyping information in the others. The text insertion point is set in the first field. You can select the field contents and start typing or tab to another field.

- **By the Way** You can change the tab order—the order in which you move from field to field when you press Tab. See "Changing the Tab Order," later in this chapter.

Moving from Record to Record

As you add new records, ClarisWorks numbers the records consecutively and shows the numbers on the book in the status panel. When you sort, search for, or hide records, the active records are renumbered as a set, beginning with 1 for the first record in the current set. You must be in Browse to add new records or move from record to record.

To move one record at a time

- Click the bottom page of the book or press Command-Return to advance to the next record.
- Click the top page of the book or press Command-Shift-Return to return to the previous record.

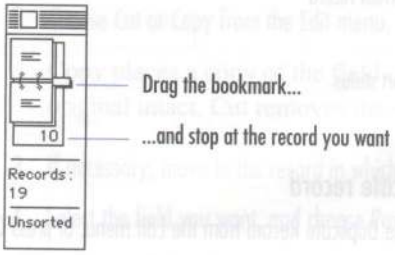
In List View you can also use the scroll bar to bring a record into view.

To move several records at a time

- Drag the bookmark down or up to move forward or back to a specific record (figure 6-8).

The record number changes as you drag. In List View you can also scroll through the records.

Figure 6-8
Using the bookmark



Selecting a Record

You can select an individual record, or you can select a group of records together. The ability to select records means that you can cut, copy, and paste whole records or groups of records.

To select a record

- Click anywhere in the record outside a field.

Or,

- Command-click to select or deselect records individually.

To select multiple records

- Drag through the records you want to select.

Or,

- Shift-click to extend the selection.

  To deselect a record, Command-click it.

To delete, copy, and paste records

- Use the same commands in the Edit menu that you use to cut, copy, and paste text.

  For more information, see "Deleting Text" and "Correcting and Revising," in chapter 3.

Hiding Records

You can use record selection to show and hide records in a database document. For example, you might want to select a group of records for customers you want to call today and hide those of customers you don't want to call. See also, "Omitting Records," later in this chapter.

To hide unselected records

1. In Browse, select the records with which you want to work.

   Use the Command-click or Shift-click techniques, described earlier in "Selecting a Record," or the Match Record command described in "Doing Complex Searches," later in this chapter.

2. Choose Hide Unselected Records from the Organize menu.

   ClarisWorks hides the records you didn't select.

To hide selected records

1. In Browse, select the records you want to hide.
2. Choose Hide Selected Records from the Organize menu.

   ClarisWorks hides the selected records.

To view all records

- Choose Show All Records from the Organize menu or press Command-Shift-A.

Viewing Records as a List

In List View, records appear one after the other and you can scroll through them on the screen. A database document is preset to show records in a list. If you deselect List View you see one record at a time (unless Page View is on). This is similar to viewing file cards.

To view records one at a time

- Choose List View from the Layout menu to remove the check.

  To return to viewing records as a list, choose the command again.

Changing the Tab Order

The **tab order** is the sequence of fields through which the insertion point moves when you press Tab. The order is preset to the order in which you created the fields. For convenient data entry, you may wish to change the order. Also, tab order is important if you plan to import data from a different database application.

To change the tab order

1. Choose Tab Order from the Layout menu.

   You see the Tab Order dialog box (figure 6-9).

2. Click Clear to remove all field names from the current Tab Order list.

3. **Select the field name you want first in the tab order, and click Move.**

   You can also double-click the field name.

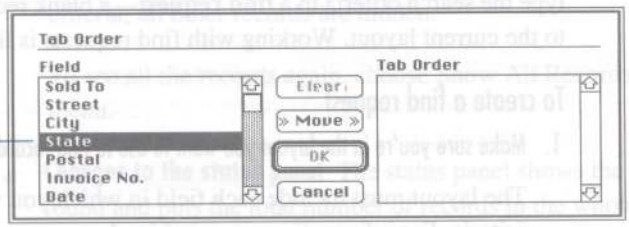


Figure 6-9
Changing the tab order

Selected field name

4. **Select the remaining field names and move them to the Tab Order list in the order you want.**

   If you don't move a field name into the tab order list, the insertion point skips the field when you press Tab.

   To move several fields at once, Shift-click to select them and then click Move.

   Double-click a field name in the Tab Order list to remove it from the list.

5. **Click OK.**

   You're returned to the document. When you tab through fields, the new order is in effect.

Finding Records

As your database grows larger, you will often need to find and isolate a specific group of records so that you can view them together, update individual records, or print only a particular group of records. The ability to sift out only the records you want is one of the key advantages of a computer database.

ClarisWorks database documents give you two ways to find records. In the first method, you use a find request to find the records you want. Other records are hidden. The second method, called *record matching*, selects the found records rather than hiding the records that don't match the search criteria. (See "Doing Complex Searches," later in this chapter.)

Creating a Find Request

To find records, you provide a description of what you want to find. The characters you type in this description are known as the **search criteria.** You type the search criteria in a **find request**—a blank record organized according to the current layout. Working with find requests is like working with records.

To create a find request

1. **Make sure you're in the layout you want to use to find records.**

   The layout must include each field in which you want to enter search criteria. For information on switching layouts, see "Rearranging and Customizing Layouts," later in this chapter.

2. **Choose Find from the Layout menu.**

   ClarisWorks creates a blank request (figure 6-10).

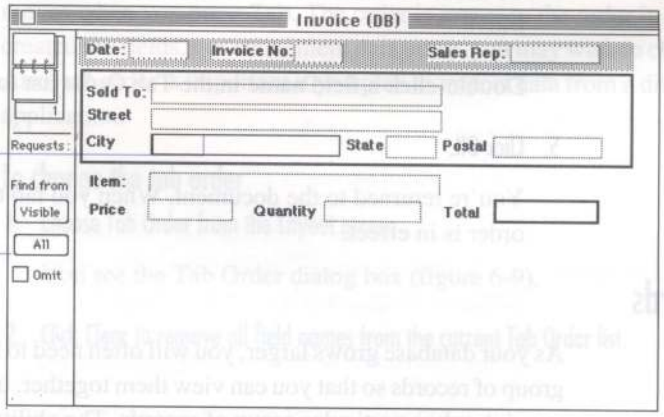


Figure 6-10
Blank find request (top portion)

3. **Type the data you want to find in the appropriate field or fields.**

   The fields in which you enter search criteria are called the search fields. You can use as many criteria as you need to make your request specific. For example, in figure 6-10 you can type Alvarez in the Sales Rep field and Computer Dictionary in the Item field. This request finds all records of Alvarez selling copies of the Computer Dictionary.

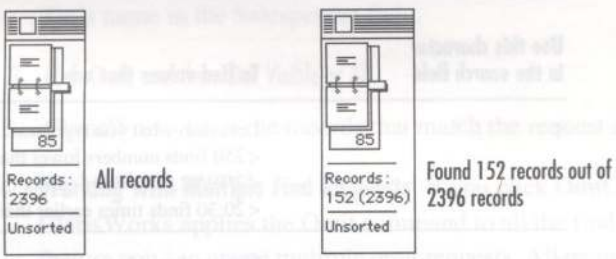
4. **Click Visible to search visible records only or All to search both visible and hidden records.**

   ClarisWorks finds the records that match the criteria, returns you to the document. The found set is the group of records that match the search criteria; all other records are hidden.

   To see all the records again, choose Show All Records from the Organize menu.

- **Changes to the status panel** The status panel shows the number of records found and puts the total number of records in the whole database in parentheses (figure 6-11).

Figure 6-11
Checking the number of records found



Using Multiple Find Requests

The example given with figure 6-10 suggests a search for Alvarez in the Sales Rep field *and* Computer Dictionary in the Item field. If you also wanted to find records that contained *either* Alvarez in the Sales Rep field *or* Computer Dictionary in the Item field, you could do that with multiple requests. This would find records of any sales made by Alvarez and records of sales of the Computer Dictionary made by any salesperson.

To create an additional find request

1. **Create the first request and type the data you want to find in the search field or fields.**
2. **Leaving the first find request as it is, and before you click Visible or All, choose New Request from the Edit menu.**

   ClarisWorks opens a second request.

3. **Type the data you want to find in the appropriate field or fields.**

4. **When you have created and filled in as many requests as you need, click Visible or All.**

   ClarisWorks finds records that match one or more of the requests.

Using Operators for Special Searches

You can use ClarisWorks operators in a search field to narrow your search for records (table 6-1). For example, the expression

```
<250
```

in a field finds records that contain numbers smaller than 250 in the specified field.

Table 6-1
Database operators

Use this character in the search field	To find values that are
<	Less than what you type next. *Examples:* <250 finds numbers lower than 250. <2/19/92 finds dates earlier than 2/19/92. <20:30 finds times earlier than 20:30.
>	Greater than what you type next. *Examples:* >250 finds numbers higher than 250. >2/19/92 finds dates later than 2/19/92. >20:30 finds times later than 20:30.
≤ (Option-<)	Less than or equal to what you type next. *Examples:* Same as for <, except ≤ also finds equal values.
≥ (Option->)	Greater than or equal to what you type next. *Examples:* Same as for >, except ≥ also finds equal values.
=	An exact match. *Examples:* =Tom finds the value Tom (does not find Tomm). =250 finds the number 250. =2/9/92 finds this date. =13:30 finds this time.

Omitting Records

Sometimes you may wish to exclude certain records from the set with which you're working. For example, if you're working in a sales management database, you may want to set aside all records for a particular salesperson. You can set records aside temporarily by omitting them. Omitting records doesn't delete them from the document, but hides them.

To omit records

1. Create a new find request.
2. In the appropriate field, type the data that identifies the records you want to omit temporarily.

   For example, to omit Huan Do's sales from the document, you would type Do's name in the Salesperson field.

3. Click Omit, and then click Visible or All.

   ClarisWorks finds the records that match the request and hides them.

- **Working with Multiple Find Requests** If you click Omit in one find request, ClarisWorks applies the Omit command to all the find requests. Using this feature you can create multiple omit requests. All records that are found are omitted, so you can display just the records you want.

To bring back omitted records

- Choose Show All Records from the Organize menu or press Command-Shift-A.

Moving Quickly to a Specific Record

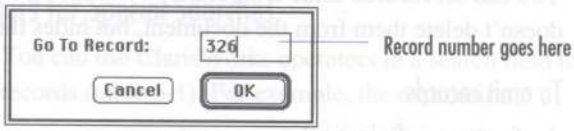
If you know a record's number, you can move to that record directly.

To find a record whose number you know

1. In Browse, choose Go To Record from the Organize menu or press Command-G.

   You see the Go To Record dialog box (figure 6-12).

Figure 6-12
Moving to a specific record



2. Type the number of the record and click OK.

   You move to the specified record.

- **Reminder** When using this method, remember that records are renumbered sequentially in a found or sorted set of records. Record 143 in the total group of records may become record 18 in a found set.

Sorting Records

You can easily rearrange records by sorting them. For example, most people like to alphabetize a list of names by last name. You can sort records by more than one level. To fine-tune the sort process, you can alphabetize a list by name and sort the postal codes in numeric order, all in the same sort operation.

- **Sorting and Layouts** When you sort, the sort occurs in the database, not just in the layout you're viewing. Therefore, if you want your layouts sorted differently, you have to sort the layout again before you browse or print.

Creating a Sort Order and Sorting

Records are sorted based on the data in the field by which you sort and on the sort order you specify. For example, you can sort the Sales Rep field alphabetically from A to Z or from Z to A.

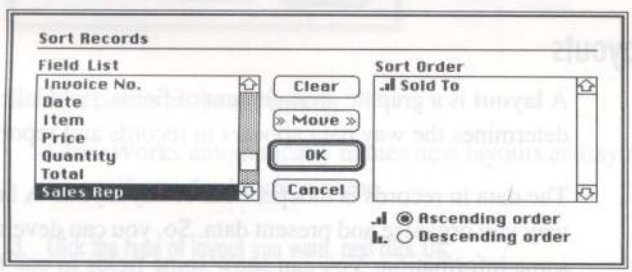
Records are sorted first by the contents of one field (for example, the Sold To field) and then by the contents of any other fields included in the sort order (for example, the Sales Rep field). This means the records in the example will be sorted by last name, and any records with the same last name will be sorted by postal code.

To sort records

1. **In Browse, make sure the records you want to sort aren't hidden.**
2. **Choose Sort Records from the Organize menu or press Command-J.**

   You see the Sort Records dialog box (figure 6-13).

Figure 6-13
Setting a sort order



3. **Select the name of the first field by which you plan to sort.**

   When you want to sort by more than one field, start with the most important field and proceed to the least important.

4. **Click a sort order (ascending or descending).**
5. **While the field name is still selected, click Move (or double-click the name).**

   The field name moves into the Sort Order list. A chart-like icon indicates ascending or descending order.

6. **Add any additional fields to the sort order using the same method.**

   To move several fields at once, Shift-click to select them.

   To remove a field name from the Sort Order list, double-click the field name.

7. Click Sort.

ClarisWorks sorts the records and returns you to the document. The status panel indicates that the records have been sorted.

- **Reminder** Records are renumbered sequentially when you sort.

More about sort orders

Ascending —sorts in alphabetical order (A to Z) for words, lowest-to-highest order for numbers, and earliest to latest for dates or times.

Descending —sorts in reverse alphabetical order for words (Z to A), highest-to-lowest order for numbers, and latest to earliest for dates or times.

Working with Layouts

A **layout** is a graphic arrangement of fields, field labels, and other objects that determines the way data appears in records and reports.

The data in records is independent of any layout. A layout simply changes the way you organize and present data. So, you can develop several layouts for the same information. You can show some fields in one layout but not in another and use different graphic and font treatments in different layouts. You can also add layout parts, which summarize data when you print.

To work with a layout, you must be in Layout. In this view, you're in the graphics environment. Fields and field labels appear as graphic objects. You can add other graphic or text objects by drawing them or by copying and pasting from a compatible application. See "Rearranging and Customizing Layouts," later in this chapter. For complete information on the graphics environment, see chapter 4, "Working with Graphics."

You don't need to switch to Layout to create a new layout.

Creating a New Layout

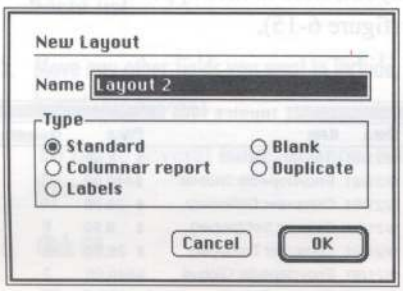
When you create a new database document, ClarisWorks creates the first layout, called a *standard layout*, automatically. You don't have to alter the layout if you like the way the records look.

To create a new layout

1. **Choose New Layout from the Layout menu.**

   You see the New Layout dialog box (figure 6-14).

Figure 6-14
Setting up a new layout



2. **Type a name for the new layout.**

   ClarisWorks automatically names new layouts as Layout 1, Layout 2, and so on, if you don't type a name.

3. **Click the type of layout you want, and click OK.**

   ClarisWorks creates the new layout, returns you to the document, and adds the name of the new layout to the bottom of the Layout menu.

More about layout types

Standard —Contains all the fields you have created for the document, in the order you created them, with each field on a separate line and the fields stacked vertically. The field name appears to the left of each field.

Columnar —Shows and prints fields in columns. Each record appears as a row. See "Creating a Columnar Layout," next in this chapter.

Blank —Contains no fields. You add the fields you want to use. See "Adding and Deleting Fields in a Layout," later in this chapter.

Labels —Shows and prints field contents arranged for use in mailing labels. See "Creating Labels," later in this chapter.

Duplicate —Creates a copy of the layout you're using when you choose New Layout.

Creating a Columnar Layout

In a columnar layout, field names appear at the top of columns, and records appear as rows (figure 6-15).

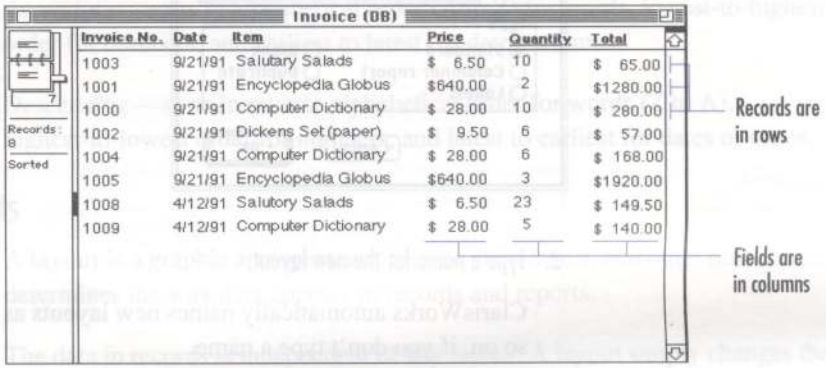


Figure 6-15
A columnar layout

To create a columnar layout

1. **Choose New Layout from the Layout menu.**

   You see the New Layout dialog box (figure 6-14).

2. **Type a name for the new layout if you wish.**

3. **In the New Layout dialog box, click "Columnar report," and then click OK.**

   You see the Set Field Order dialog box (figure 6-16). The Field List shows all the fields created for the document.

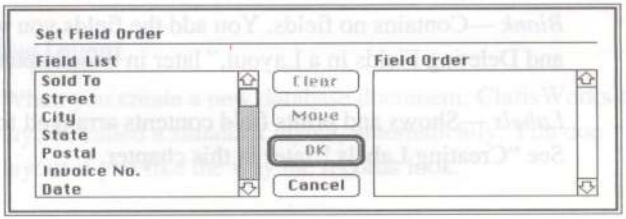


Figure 6-16
Setting the field order for columns

4. **Select name of the field you want at the upper-left side of the report, and then click Move (or double-click the field name).**

   The field name appears in the Field Order list. If you change your mind, double-click a field name in the Field Order list to move it back into the Field list.

5. **Move any other fields you want to include, in the order you want them to appear across the layout (left to right).**

   To move several fields at once, Shift-click to select them and then click Move.

6. **Click OK.**

   ClarisWorks creates the columnar report and returns you to the document, where you can enter data in the new layout. For information on customizing your columnar report, see "Rearranging and Customizing Layouts," later in this chapter.

Creating Labels

If you want to use a database document to create mailing labels, you can set up a label layout automatically.

To create a label layout

1. **Choose New Layout from the Layout menu.**

   You see the New Layout dialog box (figure 6-14).

2. **Type a name in the Name box if you wish.**

3. **Click Labels, and then click OK.**

You see the Label Layout dialog box (figure 6-17).

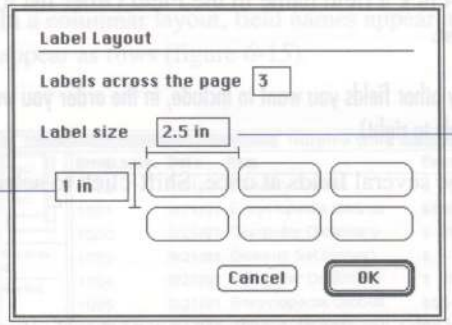


Figure 6-17
Setting up labels

4. **Type the number of labels you want to appear across the page, type values for width and height (as shown in the dialog box), and click OK.**

   You see the Set Field Order dialog box (figure 6-16).

5. **In the Field list, click the name of the field you want at the top of the label, and then click Move (or double-click the field name).**

   The field name appears in the Field Order list. If you change your mind, double-click a field name in the Field Order list to move it back into the Field List.

6. **Move the rest of the fields you want in the label and click OK.**

   To move several fields at once, Shift-click to select them and then click Move.

   ClarisWorks creates the label layout and returns you to the document. For information on customizing your labels see "Rearranging and Customizing Layouts," later in this chapter.

   If you're printing labels on a laser printer, make the top margin for the document 0.6 inch. (See "Working with Pages," in chapter 2.)

- **Closing up Space** When printing labels, ClarisWorks automatically closes up the space caused by empty fields.

See "Closing Up Space When You Print" later in this chapter.

Duplicating a Layout

When you want to change a few aspects of a layout without giving up the original layout, you can create a duplicate layout and make the changes in the duplicate.

To create a duplicate

1. From the Layout menu, choose the name of the layout you want to duplicate.

   The layout opens on the screen.

2. Choose New Layout from the Layout menu.

   The New Layout dialog box (figure 6-14) opens.

3. Type a name for the layout if you wish.

4. Click Duplicate, and then click OK.

   ClarisWorks creates an exact copy of the layout you were using when you chose New Layout. You can now switch to Layout and modify the duplicate. See "Rearranging and Customizing Layouts," later in this chapter.

Deleting a Layout

Removing a layout has no effect on the data in your records. You can delete layouts one at a time—up to the last layout, which cannot be deleted.

To delete a layout

1. From the Layout menu, choose the name of the layout you want to delete.

   The layout opens on the screen.

2. Choose Delete Layout from the Layout menu.

   ClarisWorks asks if you want to remove the layout permanently. The Delete Layout command is dimmed if you have only one layout.

Renaming a Layout

You can rename a layout at any time.

To rename a layout

1. From the Layout menu, choose the name of the layout you want to rename.
2. Choose Layout Info from the Layout menu.
3. Type a new name and click OK.

Rearranging and Customizing Layouts

Once you've created a layout you can rearrange it by moving fields and field labels, adjusting the sizes of fields, and adding text or graphics, or choosing to display records in columns.

You can change text attributes and draw boxes around fields with various line widths, line and fill colors, and fill patterns. The changes you make in a layout affect the display or printing of all records using that layout.

With a little imagination and practice, you can create a wide variety of easy-to-use layouts and produce attractive printed documents (figure 6-18).

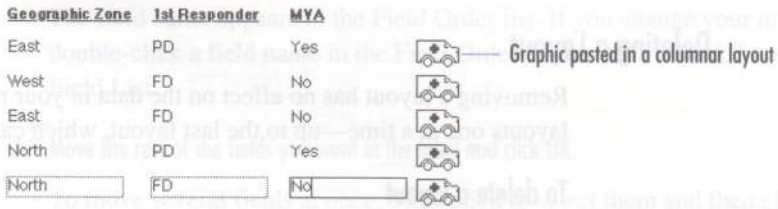


Figure 6-18
Layout with graphics

To work with a layout, you must be in Layout (not Browse or Find). In Layout, you're in the graphics environment. Field and field labels appear as graphic objects. The tool palette appears where the status panel was. For complete information on the graphics environment, see chapter 4, "Working with Graphics." Changes you make to a layout that are specific to the database environment are described in the following sections.

- **Tiling Windows in Layout** When working in Layout, it's often convenient to use two views of the document—one in Browse and the other in Layout. That way you can see immediately how your changes look. To create a new view, choose New View from the View menu. For information on tiling windows for multiple views, see "Tiling Windows," in chapter 2.

To switch to Layout from Browse or Find

- Choose Layout from the Layout menu or press Command-Shift-L.

You must be in Layout to make changes to a layout.

To switch from one layout to another

- Choose the name of the layout you want from the Layout menu.

Adding and Deleting Fields in a Layout

You can add an already defined field to a layout or remove a field without affecting the field data.

- **Deleting a Field and Its Data** This section describes adding defined fields or deleting them from a layout. For information on defining a new field or deleting a field and its data from the database, see "Working with Fields," earlier in this chapter.

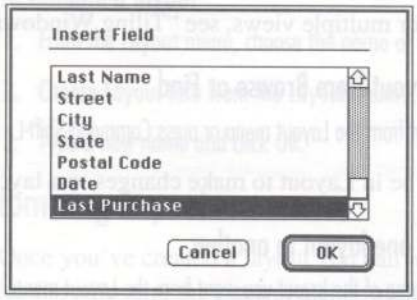
To add a field to a layout

1. Choose Layout from the Layout menu and then choose the layout you want from the bottom of the menu.

2. **Choose Insert Field from the Layout menu.**

   You see the Insert Field dialog box (figure 6-19).

Figure 6-19
Inserting a field



3. **Select the name of the field you want to add.**

   You can scroll to see field names that are out of view. You must define the field using Define Fields from the Layout menu before it appears in the list. A field can be used only once in the layout.

4. **Click OK.**

   The field appears in the layout.

To delete a field from a layout

1. **In the layout, select the field you want to delete (click the field).**
2. **Press Delete.**

   The field disappears from the layout. You must remove the field label separately or use Shift-click to select it with the field before pressing Delete.

Changing the Size of a Field

Fields are graphic objects, so you resize them as you would any graphic object. See "Resizing and Reshaping Objects" in chapter 4.

Adding Borders Around Fields

To add emphasis to a particular field, you may want to add a border around the field. You can draw a border in the layout, using the drawing tools, or you can add one automatically.

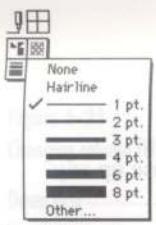
When you first open a layout in Layout, the fields appear as boxes. These boxes are for layout purposes only. They don't appear on records.

Field labels appear next to fields (on the left in a standard layout). Field labels are automatically generated as text objects. You can edit the field labels if necessary.

To add a border automatically

1. In Layout, select the field to which you want to add a border.
2. Choose a line width from the Line Width tear-off palette of the pen tool.

   ClarisWorks draws a border around the selected field with the line width you specified.



Line Width submenu

Closing Up Space When You Print

In a database document, you can make special adjustments that apply when you print. When you have separate fields for related information—such as first name and last name—you will usually want to close the gap between the two fields when you print.

A database document is preset to print fields as they appear on the screen. An exception is when you create labels. (See "Creating Labels," earlier in this chapter.) When you create labels, ClarisWorks automatically closes up the space caused by empty fields.

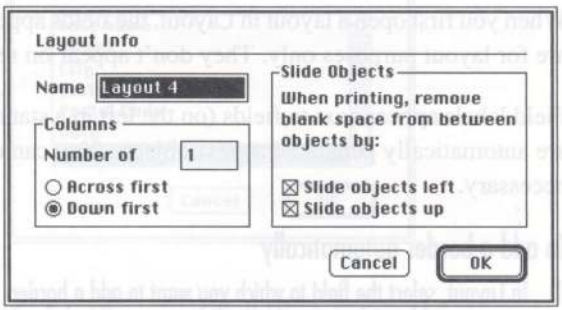
Closing up space applies to the whole layout. You don't see the effects in Layout or in Browse, but only when you print.

To remove space between fields when you print

1. Choose Layout Info from the Layout menu.

   You see the Layout Info dialog box (figure 6-20).

Figure 6-20
Sliding objects for printing



2. Click one or both of the two "Slide objects" to add the check mark.

   ClarisWorks will now print the contents of the fields and close up any extra space between fields.

Arranging Records in Columns

You can set up a layout so records are printed in columns. You can also view them in columns if Page View is checked. Label layouts are often created with columns to accommodate multiple labels.

You can fill the columns down first or across first.

To arrange records in columns

1. Choose Layout Info from the Layout menu.

   You see the Layout Info dialog box (figure 6-20).

2. Type the number of columns you want in the Columns box.

   The columns will be of equal width. You can also specify how columns are filled. (See "To change the fill order for columns," next in this chapter.)

3. Click OK.

In the layout, a gray vertical line marks the right side of the first column. All fields, text, and graphics in the body part of the layout must be placed within the first column. (For information on parts see "Using Parts to Organize Data," later in this chapter.)

To change the fill order for columns

1. Choose Layout Info from the Layout menu.

   You see the Layout Info dialog box (figure 6-20).

2. Click "Down first" or "Across first."

   Figure 6-21 shows the fill order, depending on which you choose. You only see the effects in Browse with Page View on or when you print.

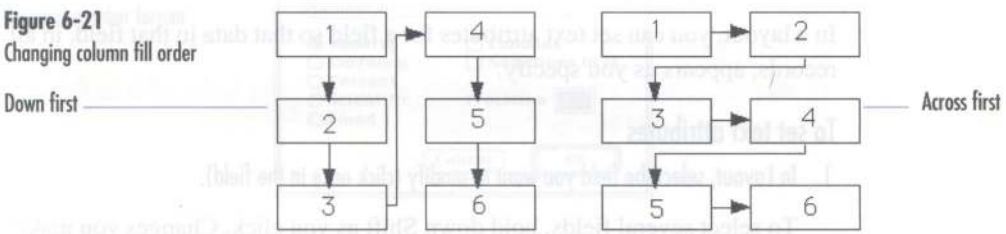


Figure 6-21
Changing column fill order

Changing the Appearance of Data

You can change the way text, numbers, dates, and times appear in Browse and when you print. The layouts that are automatically created by ClarisWorks are preset for a clean, simple appearance. You can work with layouts just as they are or change them to suit specific purposes.

Setting Text Attributes

Text attributes determine how characters—including the characters used in numbers, dates, and times—appear in Browse and when you print. Text attributes include

- font, size, style, and color
- alignment of text characters in a field
- text line spacing

In a layout, you can set text attributes for a field so that data in that field, in all records, appears as you specify.

To set text attributes

1. **In Layout, select the field you want to modify (click once in the field).**

   To select several fields, hold down Shift as you click. Changes you make will affect all selected fields.

2. **From the submenus on the Format menu, choose the text attributes you want.**

   Choose from the Font, Size, Style or Text Color submenus. You can also adjust the alignment of text in the field by choosing one of the alignment options from the Alignment submenu. To change line spacing in a text field, choose one of the options from the Spacing submenu.

3. **Choose Browse to resume data entry.**

   Data you type will reflect the new attributes you specified.

Changing the Way You Express Numbers, Dates, and Times

You can set up number, date, and time fields so that—no matter how you type the data—the numbers appear in a consistent format in Browse and when you print. For example, in a certain field you can show dates in the format July 2, 1992. Even if you type "7/2/92," ClarisWorks expresses the date as July 2, 1992, when you leave the field. You can choose different formats for different layouts.

To change number format

1. **In Layout, in the layout you want to change, double-click a number field or select the field and choose Field Format from the Options menu.**

   You see the Number Format dialog box (figure 6-22).

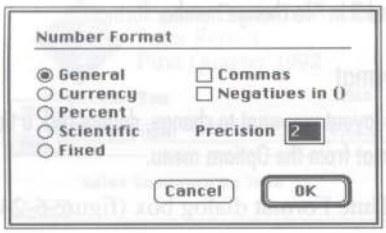


Figure 6-22
Changing number format

2. **Click the options you want, and click OK.**

   For an explanation of the different formats, see "Short Course on Number Formats," in chapter 5.

   You won't see any difference in the layout, but when you switch back to Browse, any data in the field appears in the new format.

3. **To change other number fields, double-click each one and click the appropriate options in the dialog box.**

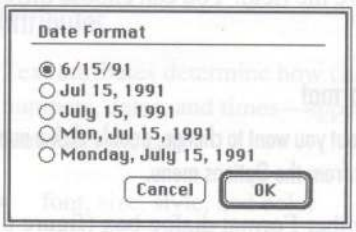
- **Entering Numbers** When you enter numbers in a formatted number field, ClarisWorks doesn't apply formatting until you tab to leave the field or click in another field.

To change date format

1. In Layout, in the layout you want to change, double-click a date field or select the field and choose Field Format from the Options menu.

   You see the Date Format dialog box (figure 6-23).

Figure 6-23
Changing date format



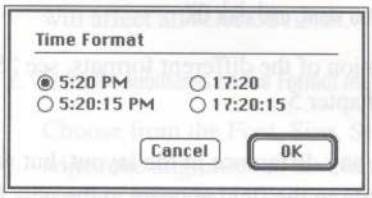
2. Follow steps 2 and 3 in "To change number format."

To change time format

1. In Layout, in the layout you want to change, double-click a time field or select the field and choose Field Format from the Options menu.

   You see the Time Format dialog box (figure 6-24).

Figure 6-24
Changing time format



2. Follow steps 2 and 3 in "To change number format."

Using Parts to Organize Data

A **part** is a section of a layout with a special purpose. You can use parts to organize data on the page or to summarize data within the document.

Understanding Parts

A new standard layout contains one part: a body, which contains all the data in your records. You can add other parts when you need them. The other parts include a header, grand summary, sub-summary, and footer. You decide which fields, field labels, or graphics to place in each part based on where you want those items to appear in Browse or when you print. Figure 6-25 shows parts in a layout.

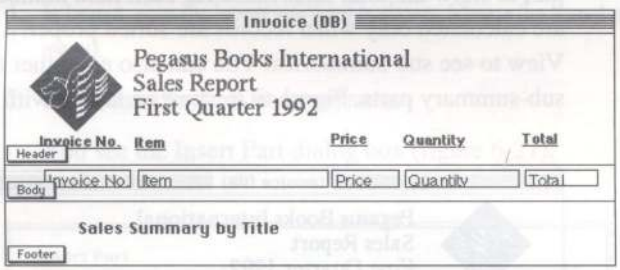


Figure 6-25
Parts in a layout

Header

A header part is a repeating element that appears at the top of each page in Browse and when you print. Put anything into the header that you want to repeat above the data itself. You can place text or graphics, such as a logo, in a header part. You can't place a field in a header.

- **Header or Page Header?** A header part differs from a page header. A page header is text or graphics that appears at the top of a page in any ClarisWorks document (except a communications document). An example of a page header is a report title and page number. A header part, on the other hand, pertains only to a ClarisWorks database document. For example, in a columnar layout, the field names, such as Invoice Number and Price, appear as column headers in the header part. These names appear on every page of a specified layout. A page header may appear above a header part and sometimes looks like part of the header part.

Grand Summary

A grand summary part contains one or more summary fields that apply a calculation to all the values in a certain field in all records. For example, a grand summary part could report a total of all sales entered in all the records. It can also contain other fields or graphics. A leading grand summary goes above the information it summarizes. A trailing grand summary goes below. You must be in Page View to see grand summaries.

Sub-Summary

A sub-summary part contains a summary field that applies a calculation to the values in a certain field for a group of sorted records. For example, you could sort sales records by item number. You could then add a sub-summary part to show the total sales made for each item number. Summary field values are calculated only when records are sorted properly. You must be in Page View to see sub-summaries. You can also add other fields or graphics to sub-summary parts. Figure 6-26 shows a layout with a sub-summary part.

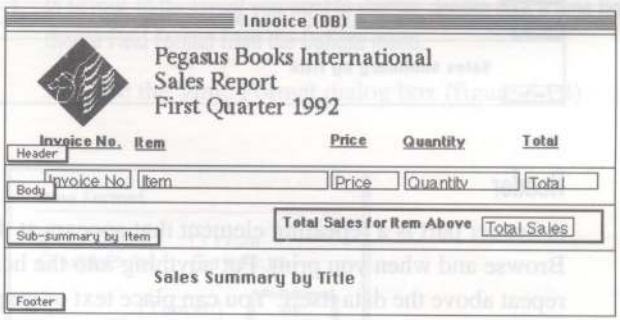


Figure 6-26
A sub-summary part

Body

A body part contains the data in all the current records.

Footer

A footer part is a repeating element that appears at the bottom of each page in Browse and when you print. You put anything into the footer that you want to repeat below the data itself. You can't place a field in a footer.

- **Note** Header and footer parts differ from a page footer. For example, you can put a *page footer* in any ClarisWorks document (except a communications document). A *footer part* organizes or labels data within the database document. Also, if you specify a page footer for a database document, it appears on every layout. You create a footer part for a specific layout.

Adding a Header or Footer Part

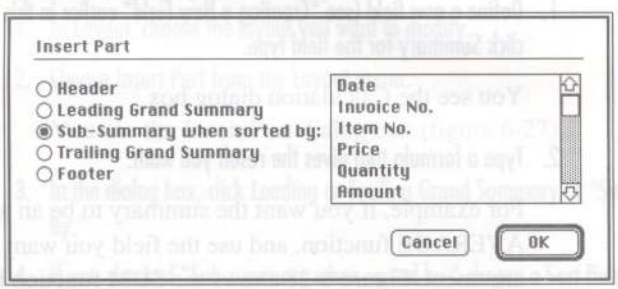
Adding a header, or footer part usually requires fewer steps than adding a summary part (see "Creating Summary Parts," next in this chapter, for information).

To add a header or footer part to a layout

1. In Layout, open the layout you want to change (choose the layout name from the Layout menu).
2. Choose Insert Part from the Layout menu.

   You see the Insert Part dialog box (figure 6-27).

Figure 6-27
Inserting a part



3. Click the type of part you want to use—Header or Footer.

- **Summary Parts** If you want to create summary parts, see "Creating Summary Parts," next in this chapter.

4. Click OK.

   ClarisWorks returns you to the layout. You can now drag the new part up or down to resize it, add text or graphics to the part.

Creating Summary Parts

When you want to summarize data in one field over a *group* of *sorted* records, you use a sub-summary part. For example, you could sort records by the Salesperson field. You could then total—that is, summarize—all the amounts in the Total Sales field, for each salesperson.

When you want to summarize data over *all* records in a document, you use a grand summary part. For example, you could total all amounts in all records for the Total Sales field, to arrive at a grand total for sales.

The process of creating summary parts involves four steps:

- Defining a summary field.
- Adding a summary part to a layout.
- Moving the summary field into the summary part.
- Sorting the records, if you added a sub-summary part.

To define a summary field (step 1)

1. **Define a new field (see "Creating a New Field" earlier in this chapter for information) and click Summary for the field type.**

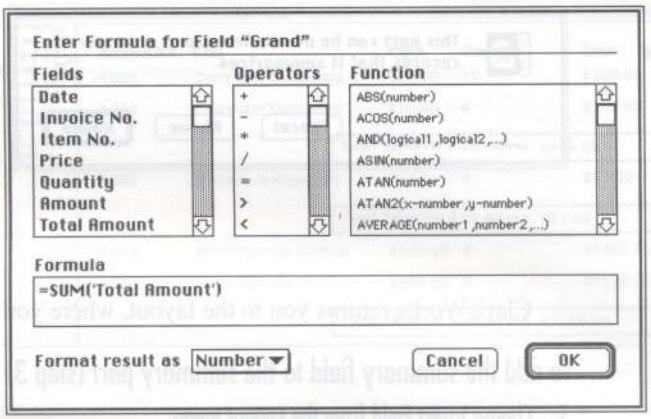
   You see the Calculation dialog box.

2. **Type a formula that gives the result you want.**

   For example, if you want the summary to be an average, use the AVERAGE function, and use the field you want to summarize as the argument. Figure 6-28 shows the SUM function being used to total amounts in the Total field, for use in a summary field named Total Sales.

For more information on building formulas, see "Short Course on Formulas," in chapter 5.

Figure 6-28
Creating a summary field for a grand summary part



3. Choose the result type from the "Format result as" pop-up menu.
4. Click OK, and then click Done in the Define Fields dialog box.

   ClarisWorks returns you to the document.

To add a summary part to a layout (step 2)

1. In Layout, choose the layout you want to modify.
2. Choose Insert Part from the Layout menu.

   You see the Insert Part dialog box (figure 6-27).

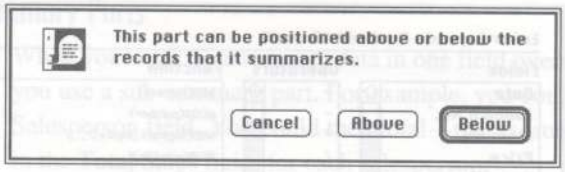
3. In the dialog box, click Leading or Trailing Grand Summary or "Sub-summary when sorted by."
4. If you checked "Sub-summary when sorted by," choose a Sort field from the list on the right.

   This is the field by which your records will be grouped. For example, sort by Last Name to summarize all records with the same last name.

5. Click OK.

   If you clicked "Sub-Summary when sorted by," the Part Position dialog box opens. Click Above or Below (figure 6-29).

Figure 6-29
Deciding on a position for a sub-summary part



ClarisWorks returns you to the layout, where you can see the new part.

To add the summary field to the summary part (step 3)

1. **Choose Insert Field from the Layout menu.**

   You see the Insert Field dialog box (figure 6-19).

2. **Select the name of the summary field you created and click OK (or double-click the field name).**

   The field and field label appear in the layout. You can also add any other fields you want.

3. **Drag the summary field and its field label into the summary part.**

   Switch to Browse and Page View to see the effects for leading or trailing grand summary parts. If you added a sub-summary part, go on to step 4, "To sort records for sub-summary part."

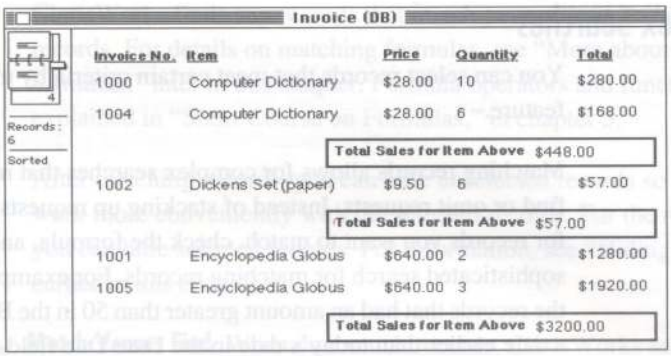
- **Fields Not Needed** You don't have to place a summary field in a sub-summary part. For example, you could use the part as a divider for sorted records by adding a solid line.

To sort the records for sub-summary part (step 4)

1. **Switch to Browse and choose Sort from the Organize menu.**
2. **Make the field you chose as the "Sort by" field in the Part Definition dialog box the first in the sort order, and click Sort.**
3. **When the sort is complete, switch to Page View.**

   You see the contents of the summary field in the position you placed it on the layout. An example is shown in figure 6-30. You must be in Page View to see the summary contents.

Figure 6-30
Effects of sub-summary parts



Resizing and Deleting Parts

In Layout, you can make a part larger or smaller so that it can hold more (or fewer) fields, field labels, or other objects. If you find you have created a part you don't need, you can delete it from the layout.

To resize a part

- Move the pointer to the line that defines the part.

  The pointer changes to a flat bar, the part pointer.

- Using the part pointer, drag the part line up or down to the position you want.

  Use multiple views, with one in Layout and the other in Browse, to see the effects of changes in part size (see "Working in Multiple Views," in chapter 2).

To delete a part

1. Remove all fields, field labels, and other objects from the part.
2. Using the part pointer, drag the part up until you see the part disappear.

   The part is deleted. You can't delete the body.

Doing Complex Searches

You can select records that meet certain criteria by using the Match Records feature.

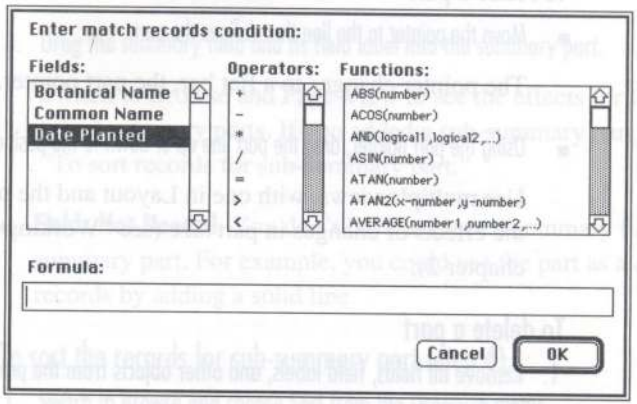
Matching records allows for complex searches that might require numerous find or omit requests. Instead of stacking up requests, you can type a formula for records you want to match, check the formula, and immediately conduct a sophisticated search for matching records. For example, you could look for all the records that had an amount greater than 50 in the Balance Due field and had a date earlier than today's date in the Date Due field.

To match records

1. **In Browse, choose Match Records from the Organize menu.**

   You see the Match Records dialog box (figure 6-31). This is the same dialog box you use for defining calculation fields. The difference is that the formula you enter here will search for records according to the field names and criteria you set, rather than performing a computation.

Figure 6-31
Matching records



2. **Type the match criteria in the Formula box and click OK.**

   You can also press Command-V to paste a formula you copied from a spreadsheet or from another source.

ClarisWorks finds any records that match your criteria and selects those records. For details on matching formulas, see "More about matching formulas," later in this chapter. Formula operators and functions are explained in "Short Course on Formulas," in chapter 5.

After matching records, you can hide unselected records so that you can work more conveniently with the selected records. For the reverse effect, you can hide selected records. For information, see "Hiding Records," earlier in this chapter.

- **Match Versus Find** When you match records, ClarisWorks selects the matching records and leaves all other records in the document open on the screen. When you find records, ClarisWorks hides the unfound records. The first record in the found set becomes the current record.

More about matching formulas

Formulas for matching should be constructed so that a formula is evaluated for a TRUE result for the records you want to select. For example, the formula

```
'NAME' = "TOM"
```

will be TRUE whenever the field called NAME contains the text TOM.

This formula

```
AND('Balance Due'>50,'Date Due'<TEXTTODATE("8/11/1991"))
```

finds records with a balance due of more than $50.00 that were due before 8/11/91. (The use of the TEXTTODATE function assumes the Date Due has been defined in the records as a date field type.)

Match doesn't work on time or date fields unless a conversion function, such as "DateToText", is used.

Short Course on Field Types

The field type determines the kind of data you can type in a field and the work you can do with that data. For example, you use a number field if you want to do arithmetic work with the field contents. Fields for money, measurement, and temperature data would all be number fields.

Text Field

A text field can contain any characters—letters, numbers, or symbols. You can enter about 500 characters, (fewer with style changes). Examples: Last Name, Description, City, Product Name.

If the amount of text you type exceeds the field borders, ClarisWorks shows all the text as you type it. When that field is not selected, you see only the text within the field borders. To print the whole field, you must adjust the size of the field on the layout (see "Rearranging and Customizing Layouts," earlier in this chapter).

Number Field

A number field can contain any number, including decimal points if appropriate. Data must fit on one line and can contain up to 254 characters. Examples: Weight, Distance, Cost, Temperature.

When you leave the field, the number appears with the format you specified (see "Changing the Way You Express Numbers, Dates, and Times," earlier in this chapter).

Date Field

A date field must contain a date. You can change the way a date appears in a field (see "Changing the Way You Express Numbers, Dates, and Times," earlier in this chapter). Examples: Hire Date, Date Planted, Date of Birth.

You can type only one complete date in a date field. You cannot mix a date with other kinds of information, and you cannot use more than one line for the date.

Time Field

A time field must contain a time. You can enter data in a 12-hour or a 24-hour format (see "Changing the Way You Express Numbers, Dates, and Times," earlier in this chapter). Examples: Hours Billed; Time of Order.

Calculation Field

You don't type in a calculation field; it contains the results of a calculation. You create a formula that uses data from other fields, functions, or constants you enter. ClarisWorks computes the result and puts it in the calculation field.

- **Important** If you include other fields in the calculation, the formula operates only on those fields in the same record.

A formula can use the values in text, number, date, time, and other calculation fields. The result of a formula can be text, numbers, a date, or a time. Examples: Due Date, Total Cost, Sales Tax.

Summary Field

A summary field is like a calculation field, but it's used in a summary part to apply to a subset of records (see "Creating Summary Parts," earlier in this chapter). Examples: Total Sales by Region, Average Temperature by Month.

Covered Elsewhere

The various ClarisWorks document types share many common techniques and features, many of which are important to your work with database documents.

Changing Page Margins

For information on changing page margins and showing and hiding them, see "Working With Pages" and "Changing Your View of a Page' in chapter 2.

Changing Your View of the Page

You zoom in and out to change the level of detail. You may also want to tile database windows, with one view in Layout and one in Browse. These features are explained in "Working With Pages" and "Changing Your View of a Page," in chapter 2.

Adding Automatic Elements

You can automatically insert page numbers and page headers, and footers. These elements work the same way in all ClarisWorks documents. See "Adding Automatic Page Numbers' and "Adding Automatic Dates and Times," in chapter 2.

Searching for Text

You can search for expressions in text fields and make replacements individually or automatically. The search technique is the same for all ClarisWorks documents. See "Searching for Information," in chapter 2.

Checking Spelling

You can check spelling of text in fields. The spell-checking feature works the same way in all ClarisWorks documents except communications. See "Using The Spellchecker," in chapter 2

Finding Synonyms

The synonym lookup feature works the same way in all ClarisWorks documents except communications. See "Finding Synonyms," in chapter 2.

Chapter 7

Using Advanced Features

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Chapter 7

Using Advanced Features

This chapter gives step-by-step instructions for using advanced ClarisWorks features, including frames, macros, and mail merge.

The features covered in this chapter are easy to learn and use. Claris refers to them as "advanced" because they give you a lot of computing power. Frames, for example, give you page-layout capability and fully demonstrate the versatility of ClarisWorks documents. Mail merge gives you the ability to customize mailings by using information stored in a database.

If you worked through the final chapter of the tutorial in *ClarisWorks Getting Started*, you already know how simple it is to use frames. Using macros and creating customized letters are just as easy.

Working with Frames

A **frame** is an object that can contain text or a spreadsheet. When you work within a frame, you can use all the tools and features that would be available in a full text or spreadsheet document. You might think of a frame as a document within a document.

When you save a document that contains a frame, ClarisWorks stores the frame and its contents as part of that document.

Drawing Linked Text Frames

You can link text frames to create interesting page layouts and improve the way you present information. Since frames are objects, you can resize and move them separately without disturbing their contents. If you reduce the size of a linked text frame, so it has less room to contain text, the extra text spills into the text frame that's linked to it.

You don't have to create linked frames. For separate sections of text, you can create frames as unlinked, free-standing objects.

- **Choosing a Document Type** Although a text document with multiple columns may seem the logical choice for page layout, a graphics document is much more flexible. In a graphics document, you can resize text frames and place them where you want them. In a text document, all the columns are the same size.

To create linked text frames

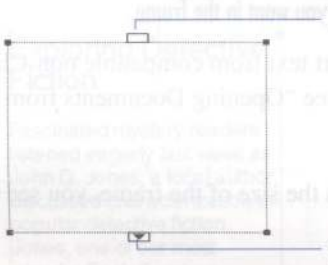
1. Create a new graphics document.
2. Choose Frame Links from the Options menu.

   This command tells ClarisWorks that you plan to draw linked frames.
3. If the tool palette isn't visible, choose Show Tools from the View menu.
4. Select the text tool, and drag to draw a frame.

5. **Click once outside the frame.**

   The frame shows handles, indicating that it's selected. In addition, the selected frame shows a top-of-frame indicator and a continue indicator (figure 7-1).

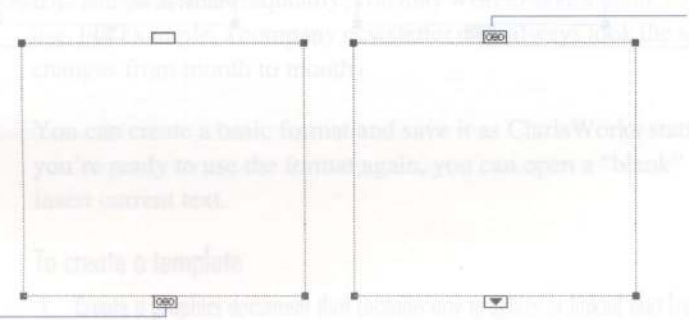
Figure 7-1
A new frame



6. **Click the continue indicator, and drag to draw a second frame.**
7. **To select both frames, hold down Shift as you click each frame.**

   With both frames selected, you can see that the frames show a new indicator—the link indicator (figure 7-2).

Figure 7-2
Chain indicating a linked frame



The link indicator shows that the two frames are now linked. Anything you type or paste into the first frame will continue into the linked frame.

To add text to the frames

1. **Click once in the first frame.**

   You should see the text insertion point blinking in the frame. If you don't, reselect the tool and try again.

2. **Type or paste the text you want in the frame.**

   You can also insert text from compatible non-ClarisWorks applications. For information, see "Opening Documents from Other Applications," in chapter 2.

   If the text exceeds the size of the frame, you see a text overflow indicator (figure 7-3).

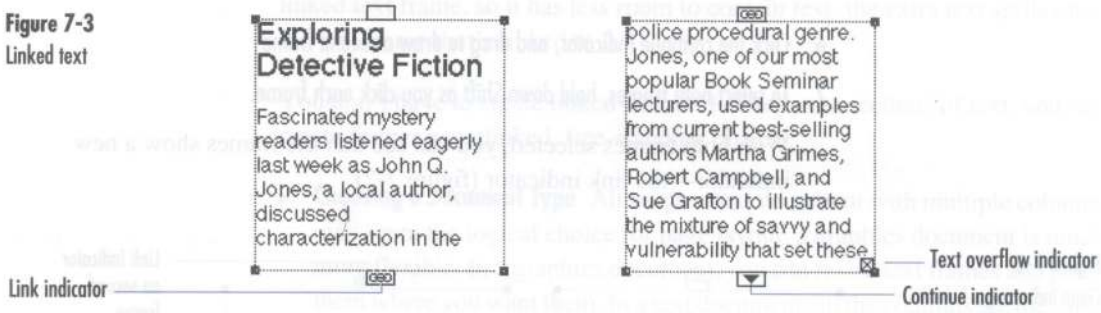
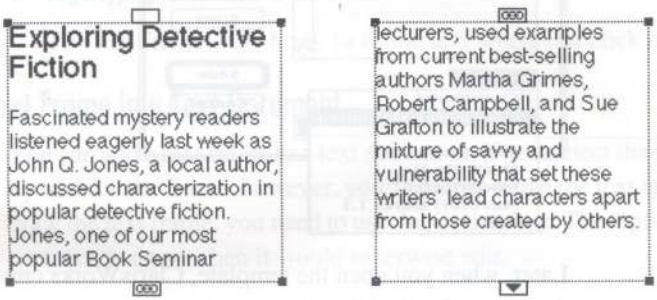


Figure 7-3
Linked text

3. Click outside the frames to select them.
4. Resize the frames to get them the way you want them.

You can now edit the text and add graphic embellishments if you wish. Figure 7-4 shows the two sample frames edited and rearranged.

Figure 7-4
Linked frames



For information on changing borders and color in the frames, see "Changing the Appearance of Frames," later in this chapter.

Creating a Template with Linked Frames

If you use a format frequently, you may wish to save a blank template for future use. For example, a company newsletter may always look the same, but the text changes from month to month.

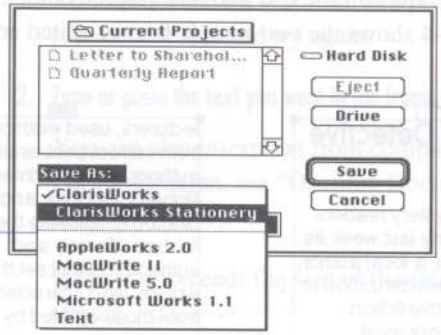
You can create a basic format and save it as ClarisWorks stationery. When you're ready to use the format again, you can open a "blank" document and insert current text.

To create a template

1. Create a graphics document that contains any graphics or linked text frames you ordinarily use.
2. Choose Save As from the File menu.

3. In the dialog box (figure 7-5), name the template and choose ClarisWorks Stationery from the Save As pop-up menu.

Figure 7-5
Saving a template



Later, when you open the template, ClarisWorks creates a new, untitled document, leaving the stationery intact.

Typing to Create a Text Frame

In most document types, you can add independent text frames simply by typing. The Frame Links command, described earlier, is preset to off, so unless you switch it on, all text frames you create are independent and unlinked.

To create a text frame by typing

1. Select the text tool and click once in the document where you want the text to start.

   The text insertion point (a blinking vertical bar) appears where you clicked, and the pointer turns to an I-beam shape.

2. Type the new text.

   As soon as you click outside the text, ClarisWorks creates an object to hold the text. The new frame lies on top of the main document. For information on stacking order, see "Changing How Objects Overlap," in chapter 4.

To shape a new text frame before you type

1. If you don't want to create linked frames, make sure Link Frames is off (Options menu).

2. **Select the text tool and drag across the document to create a text frame of the size you want.**

   As you drag, a dotted line indicates the size of the frame. When you release the mouse button, the text insertion point and I-beam pointer both appear within the frame.

3. **Begin typing the text within the frame.**

   The text frame will shrink to fit the text when you click outside the frame.

Drawing a Text Frame in a Text Document

You can add a text frame to a text document. If you select the text tool and then try to draw the frame, however, you'll simply move the text insertion point. To draw the text frame, you need to use the Option key. The Option key forces the text tool to draw when it would otherwise edit.

To draw a text frame in a text document

1. **With the Graphics tool selected, choose Frame Links if you want to link frames; otherwise, leave the command off (no check mark).**
2. **Select the text tool.**
3. **Hold down Option as you draw the text frame.**

Linking Spreadsheet Frames

You can create linked spreadsheet frames, but they're a little different from linked text frames. Linked spreadsheet frames contain different views of the same spreadsheet, rather than a "flow" of spreadsheet data from one frame to the next.

Using linked spreadsheet frames, you can show one portion of a spreadsheet in one frame and another portion in a different frame. To work on the spreadsheet, you can open the frame to a full document view, where you can use all the window control tools. Changes you make in one frame are reflected in other views of the spreadsheet.

To create a linked spreadsheet frame

1. If the tool palette isn't visible, choose Show Tools from the View menu.
2. Select the spreadsheet tool.
3. Choose Frame Links from the Options menu.

   This command tells ClarisWorks that you plan to draw linked frames.
4. Drag to draw a new object.
5. Select the graphics tool and click once inside the frame.

   You see a continue indicator like the one used in text frames (figure 7-6).

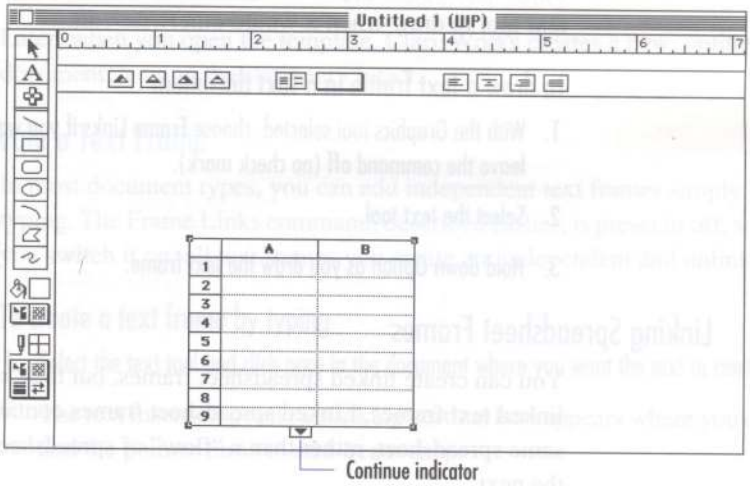
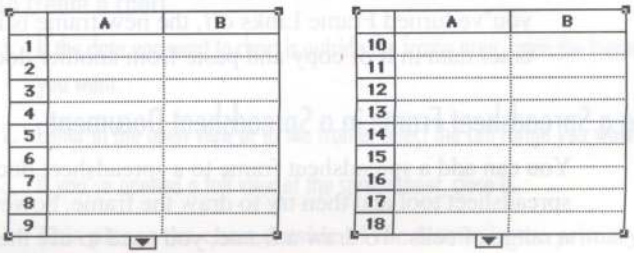


Figure 7-6
A new spreadsheet frame in a word processing document

5. **Click the continue indicator, and then draw a second frame.**

   Notice that the second frame begins with the row following the last row in the previous frame (figure 7-7).

Figure 7-7
Two linked spreadsheet frames



6. **Type new data or paste data from a spreadsheet into one of the frames.**

   The data will appear in all the linked frames, each of which will show a different portion of the spreadsheet.

   Figure 7-8 shows data pasted from a spreadsheet into the frames.

Figure 7-8
Spreadsheet data pasted into the frames

	A	B
1	1991 First Quarter	
2		January
3		
4	Net Sales	$215420
5		
6	Cost of Goods S	$129252
7	Selling and Adm	$34467
8	Shipping	$8616
9	Depreciation	$2245

	A	B
10	Interest Expens	$5600
11		
12	Total Expens	$180180
13		
14	Earnings Before	$35240
15	Income Taxes	$17990
16		
17	NET EARNING	$17250
18		

As noted earlier, the linked frames represent views of the same spreadsheet. If you select column A in the first frame, column A is selected in the second frame as well.

To add frames for a second (different) spreadsheet

- Without clicking the continue indicator, if it's present, select the spreadsheet tool and draw a new frame.

  If Frame Links is still on, you can link more frames to the new frame. If you've turned Frame Links off, the new frame is independent. You can enter data in it or copy and paste from another document.

Drawing a Spreadsheet Frame in a Spreadsheet Document

You can add a spreadsheet frame to a spreadsheet document. If you select the spreadsheet tool and then try to draw the frame, however, you'll simply select a range of cells. To draw a frame, you need to use the Option key.

To draw a spreadsheet frame in a spreadsheet document

1. With the Graphics tool selected, choose Frame Links if you want to link frames; otherwise, leave the command off (no check mark).
2. Select the spreadsheet tool.
3. Hold down Option as you draw the spreadsheet frame.

Opening a Spreadsheet Frame

You can open a spreadsheet frame to work with the data, change the format, or move to different portions of the spreadsheet.

To open a frame to full view

- Select the frame and Choose Open Frame from the View menu (or hold down Option as you double-click the frame).

  The full spreadsheet opens. You can now scroll through the spreadsheet, edit the data, and split the window into panes.

To close a full frame view

- Click the close box.

To change the view of a frame

1. Select the frame and choose Modify Frame from the Options menu.
2. Type the address of the cell you want to appear in the upper left corner of the frame, in the Origin box, and click OK.

Making Charts from Frames

You can turn data from a spreadsheet frame into a chart, just as you can with data in a spreadsheet document.

To create a chart

1. If the data you want to chart is outside the frame area, open the frame and scroll to the data you want.
2. Either in the open view or in the frame, select the cell range you want to use in the chart.
3. If you've opened a full view of the spreadsheet, close it.

   This places the chart outside of the frame, in the primary document.

4. Choose Make Chart from the Options menu, select the chart options you want, and click OK.

   You can now move the chart, rescale it, or change the fill pattern or color. If you wish, you can hide the frame under the chart. To bring the frame back into view, select the chart and choose Move to Back from the Arrange menu.

   For full information on making charts, see chapter 5, "Working with Spreadsheets."

Working with Objects Within Frames

You can draw objects and frames within other frames. For example, you can draw a spreadsheet frame in a graphics document, then choose Open Frame from the View menu to see a full view of the spreadsheet. You then choose Show Tools from the View menu, select the rectangle tool, and draw a box in the spreadsheet. Then close the full view of the spreadsheet.

To get access to the object (the box), you need to "reach into" the frame. To do this you use the Control key.

This procedure can only be used on a Macintosh that has a Control key.

To select an object within a frame

- Hold down Control as you click the object.

  With the object selected, you can change the fill pattern, line width, or color if you wish.

To move or resize an object within a frame

- Hold down Control as you drag the object (to move it) or a handle (to resize it).

Changing the Appearance of Frames

Text and spreadsheet frames are objects, so you can use the graphics tools to enhance them.

To change a frame's appearance

1. If necessary, choose Show Tools from the View menu.
2. If the frame isn't already selected, select the graphics tool, and then select the frame you want to change.
3. Use the fill and pen tools to revise the object.

   You can change the width, color or pattern, of the border and change the fill color and pattern. For details on the graphics tools, see chapter 4, "Working with Graphics."

To resize a frame

1. If necessary, choose Show Tools from the View menu.
2. If the frame isn't already selected, select the graphics tool, and click once anywhere in the frame.

   Handles appear around the frame.
3. Drag one of the handles to resize the frame.

Returning to a Document

Switching from a frame to a document, or from a document back to the frame, requires a single click.

To return to the main document from a frame

- Click anywhere in the main document (outside the frame).

  Be aware that the menus may change. For example, if you've been editing data in a spreadsheet frame in a graphics document, clicking outside the frame returns you to the graphics environment, and graphics menus are available.

Working with Macros

The term *macro* is short for *macro command*, which is a single command that executes several other commands. In other words, a **macro** is a shortcut you can use to automate repetitive tasks.

For example, in a database document you might create a macro that sorts records, opens the File menu, chooses Print, clicks OK, and prints a report. When you want to print the same report, you simply type a preassigned keyboard shortcut for the macro. ClarisWorks performs the actions for you and prints the report.

Creating a Macro

When you create a macro, you perform a series of actions, record the actions as a series, and assign a keyboard shortcut. The macro records key presses, mouse presses, and any commands you choose while recording.

To create a macro

1. **Choose Record Macro from the Macro submenu of the File menu.**

   You see the Record Macro dialog box (figure 7-9).

Figure 7-9
Naming a macro

2. **Type a name for the new macro and assign a letter or function key to use as a keyboard shortcut.**

   You don't have to assign a keyboard shortcut, but a shortcut allows you to use the macro by typing instead of choosing a command from a menu. If you prefer to use the menu, leave the name as is.

3. **If you want the macro to be played at the same speed at which you create it, click Record Pauses.**

   With this option off, ClarisWorks records only the actual steps in the macro, not the pauses you make between steps.

4. **Click Record.**

   A microphone flashes in the menu bar to indicate that recording is in progress.

   You can start or stop recording a macro at any time by pressing Shift-Command-J. You may need to do this if you want to stop recording while a dialog box is open and menus aren't available.

5. **Perform the actions you want to record in the macro.**

   ClarisWorks records every key or mouse press. The microphone flashes to remind you that you're recording.

6. **Communications documents only: To insert a timed delay or a text string for which you want the communications software to wait, choose Macro Wait from the Macros submenu (File menu).**

   The Macro Wait command is available only when you're connected. For more information, see chapter 2 of the *ClarisWorks Communications Handbook*.

7. **To stop recording, choose Stop Recording from the Macros submenu of the File menu.**

   The actions you performed are stored under the named macro.

◆ **Note** Macros cannot accurately record dragging with a mouse or scrolling windows.

Using a Macro

There are two ways to use a macro: the short way, using the keyboard, and the long way, using the menu.

To use a macro (short way)

- Press Option-Command and the letter you assigned for the keyboard shortcut; or press the assigned function key.

ClarisWorks executes the actions you recorded under the macro name.

To use a macro (long way)

1. **Choose Play Macro from the Macros submenu of the File menu.**

   You see the Play Macro dialog box, which shows all macros in the open set. If you've not yet saved the macros as a set, the list shows all the macros you've recorded for the active document.

2. **Select the name of the macro you want to use and click Play.**

   ClarisWorks executes the actions you recorded.

Editing a Macro

You can easily change macro names or key assignments and delete macros you no longer need.

To edit a macro

1. **Choose Edit Macro from the Macros submenu of the File menu.**

   You see the Edit Macro dialog box (figure 7-10).

2. **In the dialog box, select the name of the macro you want to change and click Edit.**

Figure 7-10
Selecting a macro to edit

When you click Edit, you see the Record Macro dialog box (figure 7-11).

Figure 7-11
Editing a macro

3. **Change the name or key assignment, and click OK.**

   The old name or key is replaced with the new one.

4. **In the first Edit Macro dialog box (figure 7-10), click Done when you've completed the changes.**

To delete a macro

1. **Choose Edit Macro from the Macros submenu of the File menu.**

   You see the Edit Macro dialog box (figure 7-10).

2. **In the dialog box, select the name of the macro you want to remove.**

   You can select multiple macros by holding down Shift as you click the macro names.

3. **Click Delete.**

   The macros are removed from the current macro set.

Saving a Set of Macros

You can create multiple macros and save them as sets intended for different purposes. For example, you could create a set to use exclusively in spreadsheets and another to use in database documents.

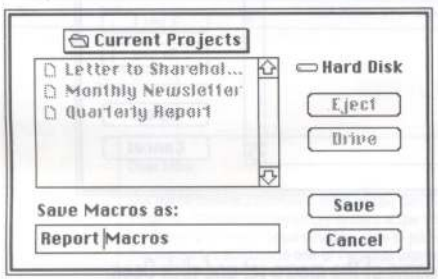
Any macros you create during a ClarisWorks session can be saved as a set and reopened later. If you quit without saving macros you've created, ClarisWorks asks if you want to save them.

To save macros as a set

1. **Choose Save Macros from the Macros submenu of the File menu.**

   You see the Save Macros dialog box (figure 7-12).

Figure 7-12
Saving macros



2. **Type a name for the macro set, find the folder in which you want to save the set, and click Save.**

   If you want the set to open automatically when you start ClarisWorks, name the set "ClarisWorks Macros" and save the set in the Claris folder (in the System folder).

3. **Click Save.**

   ClarisWorks stores the set for later use.

To open a set of macros

1. **Choose Load Macros from the Macros submenu of the File menu.**

   You see the Load Macros dialog box (figure 7-13). You may need to switch folders or disks to find the macro set.

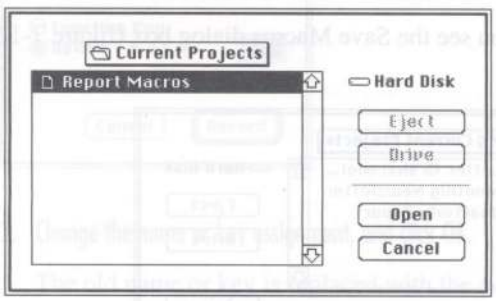


Figure 7-13
Opening a set of macros

2. **Select the name of the macro set and click Open.**

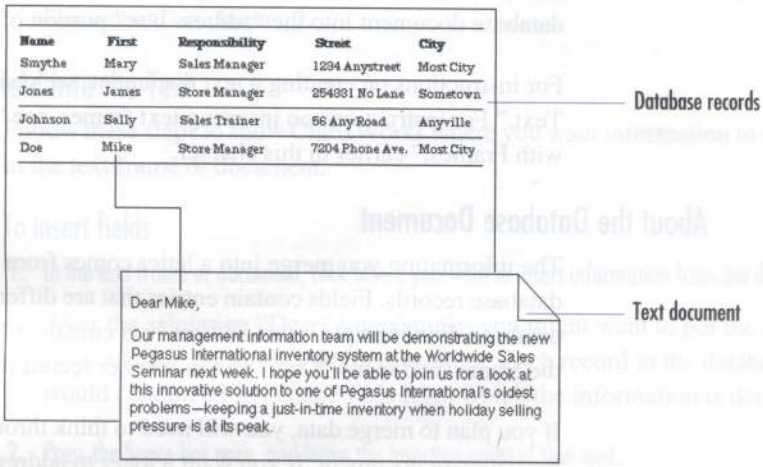
   If you already have a set of macros open, ClarisWorks closes that set and opens the new one. If you have modified macros during this session, ClarisWorks asks whether you want to save the changes.

Merging Data with a Text Document (Mail Merge)

You can insert information from a database document into a standard letter to create a series of personalized form letters.

For example, you can take names and addresses from a database document, merge the names and addresses with copies of a standard letter, and print a uniquely addressed letter for each person. This process is called **mail merge.** Figure 7-14 illustrates the concept.

Figure 7-14
Merging names into a letter



Steps in the Process

Creating a custom mailing involves four steps, each described in detail later in this chapter:

- Opening a document that contains the text into which you want to insert the data. (It can be a text document or another document type with a text frame.)
- Opening a database document that contains the information you want to insert into the text.
- Specifying where in the letter you want database information to go.
- Printing the document with database information inserted.

About the Text Document

You can insert information from a database document into any text document or text frame. The text frame can be in a text, graphics, or spreadsheet document. For example, if you create a newsletter as a graphics document, with text frames within the document, you can merge names and addresses from a database document into the "address box" portion of the graphics document.

For instructions on creating a text document, see chapter 3, "Working with Text." For instructions on inserting text frames, see "Working with Frames," earlier in this chapter.

About the Database Document

The information you merge into a letter comes from individual fields in database records. Fields contain entries that are different for each record in the database. For example, most address lists contain a Name field. In one record the Name field reads "Chu," and in another record it reads "Smith."

If you plan to merge data, you will need to think through the way you organize the database document. If you want a letter to address people by their first names, you need to create a separate field for first names in the database document. The First Name field would read "Susan" and the Last Name field would read "Chu."

You should also plan to sort or otherwise organize records before you create a merged letter. If you want to use only certain records, find them within the database document. When you merge the database and letter, ClarisWorks uses only the found set of records.

Setting Up

Steps 1 and 2 of the mail-merge process involve simply opening the database document and the text document.

To set up for mail merge

1. **Open the database document you want to use.**
2. **Open the document with the text into which you plan to merge data.**

   For information on opening documents, see "Opening an Existing Document," in chapter 2.

Inserting a Field into the Text

Follow these steps to show ClarisWorks where you want information to appear in the text frame or document.

To insert fields

1. **In the text frame or document, click where you want to insert information from the database.**

   After the salutation "Dear" for example, you might want to put the first name of each person in your organization. Each record in the database would contain a First Name field from which the information is derived.

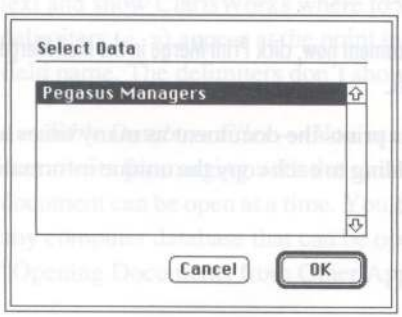
2. **Press the Space bar once, and leave the insertion point at that spot.**

```
Dear |
```

3. **Choose Mail Merge from the File menu.**

   You see the Select Database dialog box (figure 7-15).

Figure 7-15
Selecting the database



The dialog box shows the names of any open database documents.

4. **Select the name of the database document you want to merge, and click OK.**

   ClarisWorks asks you for field information (figure 7-16).

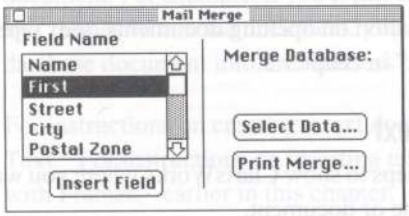


Figure 7-16
Selecting a merge field

5. **Select the name of the field that holds the information you want inserted at this point in the text document.**

6. **Click Insert Field to insert the selected field.**

   ClarisWorks places the field name in the text document and surrounds it with **delimiters**—punctuation marks that distinguish a field name from ordinary text in your text document.

   If you decide you need to switch databases, click Select Data(base) to continue inserting field names.

7. **To insert more fields, click where you want the information in the text, select the field in the Field Name box, and click Insert Field.**

   The Mail Merge palette remains open so you can insert several fields. You can also drag the palette to a convenient spot.

8. **To print the document now, click Print Merge in the Mail Merge dialog box, and click OK in the Print dialog box.**

   ClarisWorks prints the document as many times as there are records in the database, adding to each copy the unique information derived from the field you inserted.

To close the Mail Merge dialog box without printing

- Click the close box.

To insert a field name by hand

1. At the spot where you want to insert a field, type the opening delimiter.

   To create the standard opening delimiter («), press Option-Backslash (Option-\). For additional information on delimiters, see "More about inserting fields," later in this chapter.

2. Type the name of the field.

   Be exact with the name, including capitalization and spaces. If it doesn't precisely match the field name in the database document, ClarisWorks treats the name like regular text in your text document.

3. Type the closing delimiter.

   To create the standard closing delimiter (»), press Option-Shift-Backslash (Option-Shift-\).

To change the type style of the information you insert

1. Select the field name, including the delimiters, you want to change.
2. Change the font, style, size, or color by using the appropriate menu and command.

More about inserting fields

Delimiters are punctuation marks that distinguish a field name from ordinary text and show ClarisWorks where to start and end an insertion. The preset delimiters («, ») appear at the point in the text document where you inserted a field name. The delimiters don't show when you print.

Available Database Files — You can open a series of different database documents for merging with the same text document, but only one merge document can be open at a time. You can use a database source document from any computer database that can be opened as a ClarisWorks document. See "Opening Documents from Other Applications," in chapter 2.

Technical Limits — ClarisWorks supports up to 256 fields in the merge document. Each field name can have up to 63 characters, and the entry in each field can be up to 250 characters long.

Appendix A

Using ClarisWorks Functions

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Appendix A

Using ClarisWorks Functions

ClarisWorks provides powerful functions that help you perform calculations on data in spreadsheets and databases quickly and easily. This appendix gives a brief overview of functions and provides examples.

For convenience, functions are listed by category.

About Functions

A function is a predefined, named formula you can enter in a spreadsheet or database to perform a calculation.

A function is usually followed by one or more **arguments**—values on which the function acts. Arguments are enclosed in parentheses. If the function you want to use doesn't require any argument, you must enter an empty pair of parentheses.

You can enter functions in either uppercase or lowercase letters. This appendix uses a mix of uppercase and lowercase with arguments in lowercase.

These are some examples of spreadsheet functions with their arguments:

```
= RAND ()

= SUM (A2..A10)
```

= average (5, 10, 20)

Some functions have optional arguments; that is, the arguments are not required but you may supply them for added versatility. These optional arguments are indicated by braces ({ }).

If you mistype a function name or enter a function that is not supported, a dialog box appears with the message "Bad Formula", and you can re-enter the formula.

Terminology

Throughout this appendix, the following function arguments are used:

value—A number, logical, numeric expression, or cell reference.
number—A value that is numeric or generates a numeric result. An example is a reference to a cell that contains a number.
text—Alphanumeric characters. The text must be enclosed in quotation marks. If the text itself contains quotation marks, the quotation marks must be doubled.
logical—Boolean values: TRUE and FALSE.
cell—A reference to a spreadsheet cell. An example is K23.

How to Use a Function

You can type functions in the data entry bar or ClarisWorks will paste them into the spreadsheet or database for you.

The steps that follow show the basic procedure for using a function.

To use a ClarisWorks function in a spreadsheet

1. Select the cell in which you want the result to appear.
2. In the spreadsheet entry bar, type an equal sign (=) followed by the name of the function and the values on which you want it to operate.

   The values (arguments) must be in parentheses. For example, to total the values in cells A2 through A10 and put the result in cell A11, select cell A11, and type

   ```
   = SUM (A2..A10)
   ```

   in the entry bar.

3. Click the accept box (check mark) or press Enter.

   The result appears in the selected cell.

   You can also enter a function with the Paste Function command (Edit menu). For step-by-step instructions, see chapter 5, "Working with Spreadsheets."

To use a ClarisWorks function in a database

You create formulas in the database the same way you do in a spreadsheet. For calculation purposes, fields in the database correspond to cells in the spreadsheet, except that you cannot refer to fields in other records and you cannot use ranges.

For information on how to insert functions in formulas, see chapter 5.

Errors

ClarisWorks may occasionally encounter an error when it evaluates a formula. Errors are indicated by a leading pound sign (#) and a trailing exclamation point (!). Table A-1 contains a list of errors and their meanings.

Table A-1
Error Table

#N/A!	Not available
#DIV/0!	Divide by zero error
#VALUE!	Invalid value error
#NUM!	Invalid number error
#REF!	Reference to invalid cell error
#ARG!	Invalid number of arguments or incorrect argument type error
#USER!	User defined error
#DATE!	Invalid date error
#TIME!	Invalid time error
#PRECISION!	Insufficient precision available to display value
###	Insufficient cell size to display value
#ERROR!	A general error message for errors not included above

Functions by Category

ClarisWorks has eight categories of functions:

- Business and Financial
- Date and Time
- Information

- Logical
- Numeric
- Statistical
- Text
- Trigonometric

Functions appear in alphabetical order in the Paste Functions dialog box in the Edit menu, but are listed here by category for ease of reference.

Business and Financial

For all business and financial functions, **pv**, **fv**, and **pmt** are arguments for cash values. The argument called **pv** is the present value of the investment, fv is the future value, and **pmt** is the payment to be made per period. Cash received is represented by a positive number, and cash paid out is represented by a negative number. The examples illustrate this convention.

The argument **nper** represents the number of periods. The arguments **rate** and **nper** must refer to the same period. For example, if **nper** is the number of months, then **rate** must be the effective monthly interest rate.

The argument called **type** describes whether payments occur at the beginning or the end of the periods. If **type** is 0, the first payment is assumed to occur at the end of the first period. If **type** is 1, the first payment is assumed to occur at the beginning of the first period. If you omit this optional parameter, ClarisWorks assumes the value for **type** is 0.

FV (Future Value)

Format: FV(rate, nper, pmt, {pv}, {type})

Definition: Calculates the future value of an initial investment and a series of periodic payments, based on a specific periodic interest rate over a given number of periods.

Arguments:

rate—Interest rate per period. Must be a numeric expression.
nper—Number of periods. Must be a numeric expression.
pmt—Payment to be made per period. Must be a numeric expression.
pv—Present value of the investment. Must be a numeric expression. 0 if not present.
type—Type of payment scheme. Must be 0 or 1. Default is 0. Use 0 for payment at the end of the first period. Use 1 for payment at the start of the first period.

Example:

`FV(9%,12,-100,-3000)` formatted for currency returns $10452.07

This example shows that if an initial investment of $3,000 (with additional payments of $100 a year) is made at an annual interest rate of 9%, in 12 years the investment will yield $10,452.07. Payment and present value are negative because they are cash paid out. The cell used for the result was formatted for currency with precision to 2 decimal points.

IRR(Internal Rate of Return)

Format: IRR(range {,guess})

Definition: Calculates an approximate internal rate of return on an investment and series of cash flows. The internal rate of return is the rate at which the present value of an expected series of cash flows equals the value of the initial investment. The calculation is based on repeated approximations for the internal rate of return, starting with the given guess. If no guess is present, 10% is used by default. If after 20 approximations the internal rate of return still hasn't achieved an accurate result, the function returns a #NUM! error and you may try another value for your guess.

(This function is not available for use in databases.)

Arguments:

range—Must be a range of cells containing a numeric list of projected future cash flow amounts in the order in which the amounts will be paid out or received. The first item in the cash flow represents the initial investment and should be negative. Any blank cells are interpreted as 0.

guess—Your estimate of the internal rate of return. Must be a numeric expression.

Example

`IRR(C1..C11)` returns .0787 (when formatted as fixed with a precision of 4) or 7.87% (when formatted as a percent)

In this example, the cell range C1..C11 contains the following values: -220000, 0, 25000, 40000, 40000, 40000, 40000, 40000, 40000, 40000, and 40000. The example illustrates the projected expenditure of $220,000, which will increase revenues by $25,000 the second year and $40,000 for each of the next 8 years.

Since no guess was specified, ClarisWorks uses an initial guess of 10%. Note that the first cell in the range contains -220000, the initial expenditure. The second cell contains 0, showing no positive or negative revenue results for the first year. The subsequent cells reflect the increase in revenues resulting from the initial expenditure.

The IRR result of 0.0787 indicates an internal rate of return of 7.87% on the $220,000 over the 10-year period represented by the values in the range.

MIRR(Modified Internal Rate of Return)

Format: MIRR(safe,risk,values,…)

Definition: Calculates the modified internal rate of return of a series of cash flows represented by a series of values, given safe and risk investment rates.

Arguments:

safe—The rate returned by the investment that will finance the negative cash flows.

risk—The rate at which the positive cash flows can be reinvested.

values—Future cash flows. Non-numeric values are ignored. Ranges can be used for values.

Example:

`MIRR(10%,15%,-5000,2000,4000,-2000,5000)` returns 19.66% (with the cell formatted as a percent)

This example shows that, for an investment represented by the cash flows negative $5,000, $2,000, $4,000, negative $2,000, and negative $5,000, with a safe investment rate of 10% and a risk investment rate of 15%, the modified internal rate of return will be 19.66%.

NPER(Number of Periods)

Format: NPER(rate,pmt,pv{,fv}{,type})

Definition: Calculates the number of periods of an investment involving constant cash flows.

Arguments:

rate—Interest rate per period. Must be a numeric expression.

pmt—Payment to be made per period. Must be a numeric expression.

pv—Present value of the investment. Must be a numeric expression.

fv—Future value of the investment. Must be a numeric expression. 0 if not present.

type—Type of payment scheme. Must be 0 or 1. Assumed to be 0 if not present.

Example:

`NPER(10%/12,-250, 10000)` returns $48.86 using a fixed number format with a precision of 2

This example shows that in order to purchase a $10,000 car at a 10% annual interest rate, with a down payment and payments of $250 a month, you would have to make 49 monthly payments. The fraction 10%/12 means a rate of 10% per 12 months. The result is expressed in months because the rate is expressed in months.

NPV(Net Present Value)

Format: NPV(interest-rate,payment1,payment2 ,...)

Definition: Calculates the net present value of a series of future cash flows, represented by a series of values, assuming a fixed periodic interest rate. The cash flows are assumed to occur at equal time intervals, with the first cash flow occurring at the end of the first period. To find the net present value of a series of cash flows whose first flow occurs at the *beginning* of the first period, you must add the first flow separately.

Arguments:
interest-rate—Periodic interest rate. Must be a numeric expression.
payment values—Future cash flows. Non-numeric values are ignored. Ranges can be used for values.

Example:
`NPV(10%,-5000,0,10000,10000,10000)` returns $16007.04 in a currency number format

This example shows the net present value of an initial $5,000 investment, followed by an income flow of $0, $10,000, $10,000, and $10,000, is $16,007.04 after 4 years.

PMT(Payment)

Format: PMT(rate,nper,pv{,fv}{,type})

Definition: Calculates the payment needed given the interest rate, number of periods, preset value, future value, and type of payment.

Arguments:
rate—Interest rate per period. Must be a numeric expression.
nper—Number of periods. Must be a numeric expression.
pv—Present value of the investment. Must be a numeric expression.
fv—Future value of the investment. Must be a numeric expression. 0 if not present.
type—Type of payment scheme. Must be 0 or 1. Assumed to be 0 if not present.

Example:

`PMT(10%/12,36,12000,-2000)` returns -$322.67 in a currency number format.

This example shows that, to purchase a $12,000 car over 3 years at a 10% annual interest rate, with a $2,000 down payment, you would have to make monthly payments of $322.67. The fraction 10%/12 means a rate of 10% per year (12 months). The 3 years are expressed in months (36) because the interest rate is expressed in months.

PV (Present Value)

Format: PV(rate,nper,pmt{,fv}{,type})

Definition: Calculates the value today of a series of payments due in the future, based on a specific periodic interest rate over a given number of periods for a given payment amount.

Arguments:

rate—Interest rate per period. Must be a numeric expression.

nper—Number of periods. Must be a numeric expression.

pmt—Payment to be made per period. Must be a numeric expression.

fv—Future value of the investment. Must be a numeric expression. 0 if not present.

type—Type of payment scheme. Must be 0 or 1. Assumed to be 0 if not present.

Example:

`PV(10%,5,-100,5000)` returns 2725.52793 in a fixed format with a precision of 4

This example shows that to accumulate $5,000 in 5 years, with $100 payments made at the end of each year, you would have to invest $2,725.52 today at an annual interest rate of 10%. The interest rate and the number of periods are both expressed in years.

RATE

Format: RATE(fv,pv,term)

Definition: Calculates the interest rate required for a present value to grow to a specified future value when compounded over the given term. If either the present value or the term is 0, the function returns a #DIV/0! error.

Arguments:
fv—Future value of the investment. Must be a numeric expression
pv—Present value of the investment. Must be a numeric expression.
term—Number of payments. Must be a positive number.

Example:
`RATE(20000,5000,10*12)` returns .0116 in a fixed format with a precision of 4

This example shows that a monthly interest rate of 1.16% (or 13.9% annually) is required for $5,000 to grow to $20,000 over a 10-year period. The 10 represents the term of 10 years and is multiplied by 12 to find the number of monthly payments.

Date and Time

For all date and time functions, the following conventions are used for the serial number of an argument. The whole-number portion of the number (the part of the number to the left of the decimal point) represents the number of days since January 1, 1904. Negative numbers used to represent days before January 1, 1904. The fractional part of the number (the portion to the right of the decimal point, when present) represents the time of day.

The exact time would be 12:00:00 PM. A serial number of 32768 indicates the day that is 32768 days after January 1, 1904, which happens to be Saturday, September 18, 1993, at 12:00:00 AM. A serial number of 32768.675 represents the same day at 4:12 PM. The examples presented with the functions illustrate these conventions.

DATE

Format: DATE(year, month, day)

Definition: Calculates a serial number for the specified date.

Arguments:

year—Desired year. If you use a two-digit number, the number is interpreted as the first century. Must be a numeric expression greater than 0 and less than 29941.

month—Desired month of the year (1–12). Must be a numeric expression.

day—Desired day of the month. Must be a numeric expression.

Examples:

`DATE(1990,5,22)` returns 31553

`DATE(1903,12,31)` returns -1

The first example shows that May 22, 1990, is 31553 days after January 1, 1904. The second example shows that serial numbers before January 1, 1904, are negative numbers.

DATETOTEXT

Format: DATETOTEXT(serial-number {,format})

Definition: Calculates the text for a specified date serial number and format.

Arguments:

serial-number—Must be a numeric expression.

format—Optional. Must be a numeric expression in the range 0–4. (See examples for sample formats.)

Examples:

`DATETOTEXT(31767)` returns 12/22/90

This example shows that the day represented by the serial number 31767 is December 22, 1990 (which is 31767 days after January 1, 1904).

`DATETOTEXT(31767,0)` returns 12/22/90. This is the default format.
`DATETOTEXT(31767,1)` returns Dec 22, 1990
`DATETOTEXT(31767,2)` returns December 22, 1990
`DATETOTEXT(31767,3)` returns Sat, Dec 22, 1990
`DATETOTEXT(31767,4)` returns Saturday, December 22, 1990

These examples illustrate the format styles available with the optional argument.

DAY

Format: DAY(serial-number)

Definition: Converts a serial-number to a day of the month.

Argument:
serial-number—Must be a numeric expression.

Example:
`DAY(31990)` returns 2

This example shows that serial number 31990, which is August 2, 1991, is day 2 of the month.

DAYNAME

Format: DAYNAME(number)

Definition: Calculates the name of a specified day.

Argument:
number—Must be in the range 1–7. Must be a numeric expression.

Example:
`DAYNAME(6)` returns Friday

This example shows that Friday is day 6 of the week.

DAYOFYEAR

Format: DAYOFYEAR(serial-number)

Definition: Converts a serial number to a day of the year.

Argument:
serial-number—Must be a numeric expression.

Example:
`DAYOFYEAR(31990)` returns 214

This example shows that serial number 31990, which is August 2, 1991, is the 214th day of the year.

HOUR

Format: HOUR(serial-number)

Definition: Converts a time serial number to the number of the hour (in the range 0-23).

Argument:
serial-number—Must be a numeric expression. The number after the decimal point specifies the fraction of a day.

Examples:
`HOUR(0.5660)` returns 13
`HOUR(31356.5660)` returns 13

This example shows that ClarisWorks uses only the fractional portion of a serial number (the portion to the right of the decimal point). The actual time in the examples is 13:35 (1:35 PM). Notice that the hour returned is in 24-hour format.

MINUTE

Format: MINUTE(serial-number)

Definition: Calculates minutes for a specified serial number.

Argument:
serial-number—Must be a numeric expression. The number after the decimal point specifies the fraction of a day.

Examples:
`MINUTE(0.5660)` returns 35
`MINUTE(31356.5660)` returns 35

The example shows that the serial number used is 35 minutes after the hour. The actual time is 1:35 PM. Note that ClarisWorks uses only the fractional portion of a serial number (the portion to the right of the decimal point) for the calculation.

MONTH

Format: MONTH(serial-number)

Definition: Calculates the month for a specified serial number.

Argument:
serial-number—Must be a numeric expression.

Example:
`MONTH(32768)` returns 9

This example shows that the serial number 32768 (corresponding to the date September 18, 1993) is in the 9th month of that year.

MONTHNAME

Format: MONTHNAME(number)

Definition: Calculates the name of the month.

Argument:
number—Must be in the range 1–12. Must be a numeric expression.

Example:
`MONTHNAME(10)` returns October

This example shows that the 10th month of the year is October.

NOW

Format: NOW( )

Definition: Depending on the format of the cell, calculates the current date or serial number of the current date and time based on the internal clock of the Macintosh.

Argument:
This function requires no arguments.

Examples:
`NOW( )` returns July 5, 1991

This example shows that the function was last executed on July 5, 1991 and that the cell was formatted as a date.

`NOW( )` returns 31931.50871

This example shows that the function was executed on June 5, 1991, at 12:12:33 PM and that the cell was not formatted as a date.

SECOND

Format: SECOND(serial-number)

Definition: Calculates the second for a specified serial number.

Argument:
serial-number—Must be a numeric expression. The number after the decimal point specifies the fraction of a day.

Example:
`SECOND(0.5664)` returns 37

This example shows that a serial number of 0.5664 (fractional way through the day) is 37 seconds after 1:35 PM.

TIME

Format: TIME(hour,minute,second)

Definition: Calculates the serial number of a specified time, based on a 24-hour clock.

Arguments:
hour—Must be a numeric expression in the range of 0 to 23.
minute—Must be a numeric expression in the range of 0 to 59.
second—Must be a numeric expression in the range of 0 to 59.

Example:
`TIME(12,0,0)` returns 0.5

This example shows that 12 o'clock noon (0 minutes, 0 seconds) is halfway (0.5) through the day.

TEXTTODATE

Format: TEXTTODATE(date-text)

Definition: Calculates the serial number of date-text.

Argument:
date-text—Any text expression that is a date.

Examples:
`TEXTTODATE("August 1, 1991")` returns 31989
`TEXTTODATE("Aug 1, 1991")` returns 31989
`TEXTTODATE("8/1/91")` returns 31989

These examples show that several format styles are acceptable and equivalent.

TEXTTOTIME

Format: TEXTTOTIME(time-text)

Definition: Calculates the serial number of time-text.

Argument:
time-text—Any text expression that is a date.

Examples:

`TEXTTOTIME("13:30")` returns 0.5625 (24-hour clock)

`TEXTTOTIME("1:30 PM")` returns 0.5625 (12-hour clock)

These examples show that 12 and 24-hour time formats are supported.

TIMETOTEXT

Format: TIMETOTEXT(serial-number {,format})

Definition: Calculates text for specified time and format.

Arguments:

serial-number—Must be a numeric expression. The number to the right of the decimal point specifies the hour as a fractional part of a 24-hour day.

format—Must be a number from 0 to 3.

1 = hour (using a 12-hour clock) :min:sec AM/PM

2 = hour (using a 24-hour clock) :min

3 = hour (using a 24-hour clock) :min:sec

default = hour (using a 12-hour clock) :min AM/PM

Use of a format other than 1,2, or 3 causes the results to display in the default format. Use of a negative number for the format generates the same result as using a format of 1.

Examples:

`TIMETOTEXT(0.55)` returns 1:12 PM

This example shows that the time represented by the serial number 0.55 represents 1:12 PM.

These examples illustrate the format styles available with the optional argument:

`TIMETOTEXT(0.55,0)` returns 1:12 PM (the default format)

`TIMETOTEXT(0.55,1)` returns 1:12:00 PM (seconds shown)

`TIMETOTEXT(0.55,2)` returns 13:12 (24-hour clock format)

`TIMETOTEXT(0.55,3)` returns 13:12:00 (24-hour clock format, with seconds)

WEEKDAY

Format: WEEKDAY(serial-number)

Definition: Converts a serial number to a number for the day of the week.

Argument:
serial-number—Must be a numeric expression.

Example:
`WEEKDAY(32768)` returns 7

This example shows that the serial number 32768 is the 7th day of the week (Saturday). In the example, the serial number corresponds to the date September 18, 1993, so that date falls on a Saturday.

WEEKOFYEAR

Format: WEEKOFYEAR(serial-number)

Definition: Converts a serial number to the number of the week in the year.

Argument:
serial-number—Must be a numeric expression.

Example:
`WEEKOFYEAR(32768)` returns 38

This example shows that September 18, 1993, which has a serial number of 32768, falls in the 38th week of that year.

YEAR

Format: YEAR(serial-number)

Definition: YEAR computes the year for the given serial number.

Argument:
serial-number—Must be a numeric expression.

Examples:

`Year(Now( ))` returns 1991

The now function returns a serial number which can then be used by the YEAR function to calculate the current year.

`Year(29500)` returns 1984

This example shows that 29,500 days after January 1, 1904 falls in the year 1984.

Information

ALERT

Format: ALERT(value)

Definition: Displays a message in a dialog box. (This function is not available for use in databases.)

Argument:

value—Any text or numeric expression.

Examples:

`ALERT("Whoops!")` shows a dialog box that displays Whoops!

`ALERT(B7)` shows a dialog box that displays 121

This example has the number 121 in cell B7.

`ALERT(B9+A4)` shows a dialog that displays 13

This example has the number 5 in cell B9 and 8 in cell A4.

```
IF(B7>10, ALERT("B7 greater than 10!"), B7)
```

In this example, if cell B7 becomes greater than 10 as the result of a calculation, an alert appears to inform the user; otherwise, the value of B7 goes into this cell.

BEEP

Format: BEEP( )

Definition: Plays the alert sound set in the Macintosh control panel.

Argument: None.

Example:

```
IF(A1>=10,BEEP( ),"Less than 10")
```

Plays an alert beep if the contents of cell A1 are greater than or equal to 10. If the value in cell A1 is less than 10, the text "Less than 10" will be displayed.

CHOOSE

Format: CHOOSE(index,value1,value2, ...)

Definition: Returns the value specified by the index from the list of values that follow. The length of the list is limited to 250 characters.

Arguments:
index—Any number or numeric expression.
values—Any text or numeric expression.

Examples:

`CHOOSE(3,"1st","second",7,"last")` returns 7

The index is 3, and 7 is the third value listed. This example shows that the list may be text or numbers and that the result may be a number.

`CHOOSE(2,"1st","hat",7"last")` returns hat.

The index is 2, and hat is the second value listed. This example shows that the list may be text or numbers and that the result may be text.

COLUMN

Format: COLUMN({cell})

Definition: Returns the column number of the current cell or that of the cell referred to. (This function is not available for use in databases.)

Argument:
cell—Optional; must be a cell reference.

Examples:
`COLUMN()` returns 5

This example returns 5 when the formula is entered in any of the rows in the E column, which is column 5.

`COLUMN(B7)` returns 2

This example shows that the cell B7 is in the B column, which is column 2.

Related Function: ROW

ERROR

Format: ERROR( )

Definition: Gives the error value #ERROR!

Argument: None.

Example:
`IF(ISBLANK(A1), "HI", ERROR())`

Assuming cell A1 has some data in it, it is not blank, so the result is #ERROR! If cell A1 had been blank, the result would have been HI.

Related Function: NA( )

HLOOKUP

Format: HLOOKUP(value, compare-range, index {,method})

Definition: HLOOKUP is a horizontal row lookup. It searches the top row of a range looking for the search value. If the search condition is met (as determined by the method argument), the row number of the found cell is offset by the amount specified by the index. The function then returns the contents of that cell. If the search condition is not met, an error is returned. The optional *method* argument controls the type of comparison used for the search.

This function is not available for use in databases.

Arguments:

value—Any text or numeric expression.
compare-range—Must be a cell range of 1 or more rows.
index—Must be a numeric expression.
method—Optional. Use 1 to return the first number less than or equal to the given value when the compare-range is increasing from left to right.

Use -1 to return the first number greater than or equal to the given value when the compare-range is decreasing from left to right.

Use 0 to return the exact match to the given value (numeric order of the range is unimportant).

Examples:

The following three examples use the spreadsheet in figure A-1.

Figure A-1
Sample spreadsheet

	A	B	C	D	E
1		1	11	21	50
2		3	12	22	40
3		5	13	23	30
4		7	14	24	20
5		9	15	25	10

`HLOOKUP(11,B1..E5,1)` returns 12

This example shows that ClarisWorks goes from left to right in the first row to search for the value (ascending order method). Cell C1 (which contains 11) is an exact match, so the index (which is 1) is added to the row number of that cell to obtain cell C2. Cell C2 contains the result of 12.

`HLOOKUP(22.5,B1..E5,4)` returns 25

This example shows that the greatest number less than or equal to 22.5 is 21, found in cell D1. Adding the row index of 4 produces cell D5, which contains 25.

`HLOOKUP(60,B1..E5,4)` returns #N/A!

The search value of 60 is beyond the rightmost cell in the top row, so an error is returned.

The following two examples use the spreadsheet in figure A-2.

Figure A-2
Sample spreadsheet

	A	B	C	D	E
1		50	40	30	20
2		3	12	22	44
3		5	13	23	34
4		7	14	24	18
5		9	15	25	10

`HLOOKUP(30,B1..E5,2,-1)` returns 23

This example shows that ClarisWorks goes from left to right on the top row to search for the value 30. The exact value of 30 is found in cell D1. The index of 2 is added to the row to obtain cell D3, which contains 23.

`HLOOKUP(25,B1..E5,3,-1)` returns 24

This example shows that ClarisWorks goes from left to right on the top row to search for a value greater than or equal to 25. The value of 30 is found in cell D1. The index of 3 is added to the row to obtain cell D4, which contains 24.

Related Functions: LOOKUP, VLOOKUP

INDEX

Format: INDEX(range, row-offset, column-offset)

Definition: Returns the value of the cell specified by the row-offset and column-offset found in the range. (This function is not available for use in databases.)

Arguments:

range—Must be a cell range of one or more rows.

row-offset—Must be a numeric expression.

column-offset—Must be a numeric expression.

Examples:

The following two examples use the spreadsheet in figure A-3.

Figure A-3
Sample spreadsheet

	A	B	C	D
1		1	10	20
2		2	11	21
3		3	12	22
4		4	13	23
5		5	14	24
6				

`INDEX(B1..D5,3,2)` returns 12

This example shows that the number 12 is in the cell that is in the 3rd cell down and the 2nd row over from B1 (the start of the range).

`INDEX(B1..D5,4,3)` returns 23

This example shows that the number 23 is in the cell that is in the 4th cell down and the 3rd row over from B1 (the start of the range).

LOOKUP

Format: LOOKUP(value, range-1, range-2 {,method})

Definition: Searches for the given value (row by row) in the first range (range-1) and returns the value of the corresponding cell in the second range (range-2). If no cells satisfy the search criteria, an error is returned. The optional argument called method controls which comparison type is used to satisfy the search. (This function is not available for use in databases.)

Arguments:

value—Any text or numeric expression.

range -1—Must be a cell range.

range -2—Must be a cell range.

method—Optional. Use 1 for ascending ranges. This is the default. Values in range-1 must be in increasing order from left to right and top to bottom.

Use -1 for descending ranges. Values in range-1 must be in decreasing order from left to right and top to bottom.

Use 0 to find an exact match. The order of range-1 is not important.

Examples:

The following two examples use the spreadsheet in figure A-4.

Figure A-4
Sample spreadsheet

	A	B	C	D	E
1		1	2	21	51
2		3	4	22	41
3		5	6	23	31
4		7	8	24	21
5		9	10	25	11

`LOOKUP(8,B1..C5,D1..E5)` returns 21

This example shows that ClarisWorks goes from left to right in a row to search for the value 8 and then moves to check the next row. The value 8 is found in cell C4. The corresponding cell to C4 in the second range is E4, which contains 21.

`LOOKUP(5.5,B1..C5,D1..E5)` returns 23

This example shows that the greatest number less than or equal to 5.5 is 5, and its corresponding spot in range2 is cell D3, which contains 23.

Related Functions: HLOOKUP, VLOOKUP

MACRO

Format: MACRO(text)

Definition: Executes one or more saved ClarisWorks macros. The name of the macro to be executed must be enclosed in quotation marks.

Argument:
text—The exact name of a saved ClarisWorks macro (case-sensitive), in quotation marks.

Examples:

```
MACRO("CallBank")
```

This example executes the macro named CallBank. It might return a text expression, or serve as a connection macro applied in the ClarisWorks Communication environment to dial your bank.

`IF(J34<0,MACRO("CallBank",0)` returns 7

This example executes the CallBank macro when a given cell (in this case, J34) contains a negative value.

MATCH

Format: MATCH(value, range, method)

Definition: Finds the position of the first occurrence of the value in the range and returns the number of that position from start of the range. (This function is not available for use in databases.)

- **Note** If the MACRO doesn't execute properly, check your spelling and the accuracy of the upper and lower case entries.

Argument

value—Any text or numeric expression.

range—Must be a cell range.

method—Optional. Descending range is -1 and values in the range must be in decreasing order from left to right and top to bottom. Ascending range (default) is 1 and values in the range must be in increasing order from left to right and top to bottom. Use 0 for an exact match. Range order is not important.

Examples:

The following three examples use the spreadsheet in figure A-5.

Figure A-5
Sample spreadsheet

	A	B	C
1	#N/A!	a	b
2		c	d
3		e	f
4		g	h
5		i	j

`MATCH("f",B1..C5,0)` returns 6

This example shows that the function goes from left to right on a row searching for a match, then drops down to look at the next row in the range. So *f* is the 6th element in the range (a,b,c,d,e,f).

`MATCH("e",B1..C5,1)` returns 5

`MATCH("e",B1..C5,-1)` returns #N/A!

The last example returns #N/A because the method requires a descending range and the text is ascending.

NA

Format: NA( )

Definition: Returns the error value #N/A!

Argument: None.

Example:

```
IF(ISBLANK(A1), "HI", NA())
```

Assuming cell A1 has data in it, it is not blank, so the result is #N/A! If cell A1 had been empty, the result would have been HI.

Related Function: ERROR( )

ROW

Format: ROW({cell})

Definition: Returns the row number of the current cell or that of the cell referred to. (This function is not available for use in databases.)

Argument:
cell—Optional; must be a cell reference.

Examples:
`ROW()` returns 7

This example returns 7 when the formula is entered in any column in row 7.

`ROW(B7)` returns 7

This example shows that cell B7 is in row 7.

Related Function: COLUMN

TYPE

Format: TYPE(value)

Definition: Returns a number that represents one of four types of value. (See the examples.)

Argument:
value—Any expression.

Examples:
`TYPE(A5)` returns 1 (blank) if the cell A5 is empty
`TYPE(TRUE)` returns 2 (logical)
`TYPE(1.5)` returns 3 (number)
`TYPE("hello")` returns 4 (text)
`TYPE(PI())` returns 3 (number)

VLOOKUP

Format: VLOOKUP(value, compare-range, index {,method})

Definition: VLOOKUP is a vertical column lookup . It searches the left column of a range looking for the search value. If the search condition is met (as determined by the method argument), the column number of the found cell is offset by the amount specified by the index. The function then returns the contents of that cell. If the search condition is not met, an error is returned. The optional *method* argument controls the type of comparison used for the search.

This function is not available for use in databases.

Arguments:
value—Any text or numeric expression.
compare-range—Must be a cell range of 1 or more rows.
index—Must be a numeric expression.
method—Optional. Use 1 to return the first number less than or equal to the given value when the compare-range is increasing from left to right. This is the default method.

Use -1 to return the first number greater than or equal to the given value when the compare-range is decreasing from left to right.

Use 0 to return the exact match to the given value (numeric order of the range is unimportant).

Examples:

The following two examples use the spreadsheet in figure A-6.

Figure A-6
Sample spreadsheet

	A	B	C	D	E
1		1	99	21	50
2		3	12	22	40
3		5	212	23	30
4		7	14	24	20
5		9	15	25	10

`VLOOKUP(9,B1..E5,2)` returns 25

This example shows that ClarisWorks goes from top to bottom in a column to search for the value. Cell B5 contains an exact match to the desired 9, so the column index of 2 is applied to return cell D5, which contains 25.

`VLOOKUP(5.5,B1..E5,1)` returns 212

This example shows that the greatest number in column B that is less than or equal to 5.5 is 5, found in cell B3. Applying the index of 1 results in cell C3, containing 212.

The following example uses the spreadsheet in figure A-7.

Figure A-7
Sample spreadsheet

	A	B	C	D	E
1		Tom	99	21	50
2		Scott	12	22	40
3		Mike	212	23	30
4		Bob	14	24	20
5		Andy	15	25	10

`VLOOKUP("Scott",B1..E5,1,-1)` returns 12

This example shows that ClarisWorks goes from top to bottom in a column to search for the value. Because -1 is specified as a method, the items in the cell must be in decreasing order. Cell B2 contains an exact match to the desired Scott, so the column index of 1 is applied to return cell C2, which contains value of 12.

Related Functions: HLOOKUP, LOOKUP

Logical

AND

Format: AND(logical1, logical2, ...)

Definition: Determines whether all values are nonzero.

Argument:
logical—one or more numeric expressions.

Examples:
`AND(B1)` returns TRUE if there is a nonzero number in cell B1
`AND(1.5,2.1,11,22.5,6,1.5)` returns TRUE because all values are nonzero
`AND(5,0,6)` returns FALSE because all values are not nonzero

These examples show all arguments must be nonzero to return a result of TRUE.

IF

Format: IF(logical, true-value, false-value)

Definition: Determines whether a value or logical expression is zero or nonzero, and returns the true-value if it is TRUE (nonzero) and the false-value if it is FALSE (zero).

Arguments:
logical—Must be a numeric value or logical expression.
true-value—Must be a numeric expression.
false-value—Must be a numeric expression.

Examples:

`IF(C1, 5, 10)` returns 10 if cell C1 is empty and returns the true-value of 5 if it is nonzero

`IF(TRUE, "It's TRUE", "It's FALSE")` returns the true-value of "It's TRUE".

`IF(FALSE, "It's FALSE", "It's TRUE")` returns "It's FALSE".

`IF(5>10, "5 is greater than 10", "5 is not greater than 10")` returns the false-value of "5 is not greater than 10".

These examples show that, if the logical evaluates as TRUE (nonzero), the result of the function is the second argument.

ISBLANK

Format: ISBLANK(value)

Definition: Determines whether an expression is blank or whether there is a number or text in the expression. Returns TRUE if the expression is blank, FALSE if a number or text exists.

Argument:

value—Must be a numeric expression.

Examples:

`ISBLANK("test")` returns FALSE

This example shows that the expression is not blank.

`ISBLANK(-1)` returns FALSE

`ISBLANK(0)` returns FALSE

This example shows that 0 is not considered a blank.

`ISBLANK(A1)` returns TRUE if nothing is found in cell A1

This example shows that A1 did not contain text, a number, or formula, and is therefore blank.

ISLOGICAL

Format: ISLOGICAL(value)

Definition: Determines whether an expression is TRUE (zero) or FALSE (nonzero).

Argument:

value—Any text, number, cell reference, or function that evaluates as a Boolean value. (This function is not available for use in databases.)

Examples:

`ISLOGICAL(TRUE)` returns TRUE

This example shows that TRUE is a Boolean expression.

`ISLOGICAL(1<2)` returns TRUE

This example shows that the logical expression is a Boolean expression.

`ISLOGICAL("1")` returns FALSE

This example shows that text (indicated by the quotation marks) is not a Boolean expression.

ISERROR

Format: ISERROR(value {,error-type})

Definition: Determines whether an error has occurred in evaluating an expression.

Arguments:

value—May be a numeric or text expression.

error-type—Any of the pre-defined errors listed below:

#N/A!- Not available
#DIV/0!- Divide by zero error
#VALUE!- Invalid value error
#NUM!- Invalid number error
#REF!- Reference to invalid cell error
#ARG!- Invalid # of arguments or incorrect argument type
#USER!- User-defined error.
#DATE!- Invalid date error
#TIME!- Invalid time error
#ERROR!- Not a true error

Examples:

`ISERROR(K7)` returns FALSE

This example shows that no error was encountered when evaluating cell K7, assuming K7 contains text or a valid number.

`ISERROR(Dayname( ))` returns TRUE

This example shows that an error was encountered when evaluating the Dayname function without the required argument present (the error is #VALUE!).

`ISERROR(Dayname(11))` returns TRUE

This example shows that an error was encountered when evaluating the Dayname function with the required argument out of range (the error is #ARG!).

```
ISERROR(E1,#DIV/O!)
```

This example illustrates use of the optional argument, error-type. It returns TRUE if cell E1 contains #DIV/O! and returns FALSE if cell E1 contains other than #DIV/O!

ISNA

Format: ISNA(value)

Definition: Tests for an error condition in any text, number, cell reference, or funtion. Returns TRUE if the result of the evaluation is #NA!.

Arguments:
value—Any text, number, cell reference, or function.

Examples:
`ISNA(TRUE)` returns FALSE

This example shows that TRUE is a boolean expression.
`ISNA(NA())` returns TRUE

Related Functions: ISERROR

ISNUMBER

Format: ISNUMBER(value)

Definition: Determines whether an expression is a number (TRUE) or not (FALSE).

Argument:
value—Any text, number, cell reference, or function that evaluates to a number (not text or blank).

Examples:
`ISNUMBER("a")` returns FALSE
`ISNUMBER(-2.5)` returns TRUE

Related Functions: ISTEXT

ISTEXT

Format: ISTEXT(value)

Definition: Determines whether an expression is text (TRUE) or not text (FALSE).

Argument:
value—Any text, number, cell reference, or function that evaluates as text (not a number).

Examples:
`ISTEXT("hello!")` returns TRUE
`ISTEXT(542)` returns FALSE

Related Functions: ISNUMBER

NOT

Format: NOT(logical)

Definition: Inverts the sense of the expression. TRUE is changed to FALSE.

Argument:
logical—Must evaluate to a Boolean expression.

Examples:
`NOT(0)` returns TRUE (0 evaluates as FALSE)
`NOT(-1)` returns FALSE (–1 evaluates as TRUE (nonzero))

OR

Format: OR(logical1, logical2, ...)

Definition: Determines whether any value is nonzero.

Argument:
logical—One or more numeric expressions.

Examples:
`OR(5,0,6)` returns TRUE (the first argument is not zero)
`OR(sin(degrees(90)), 0)` returns TRUE (the sine of 90 degrees is 1, which is a nonzero value)
`OR(B1,K1)` returns FALSE if both cells are empty or contain zero

These examples show that if even one argument is nonzero, the OR function returns TRUE.

Numeric

ABS

Format: ABS(number)

Definition: Calculates the absolute value of the argument. Returns a positive number. Returns 0 if the argument is the address of a cell that is blank.

Argument:
number—Must be a numeric expression.

Examples:
`ABS(-5.57)` returns 5.57
`ABS(5)` returns 5

The second example shows that the function also works for positive numbers.

`ABS(A1)` returns the positive value of the number in cell A1.

EXP

Format: EXP(number)

Definition: Calculates e to the power of number (e^{number})

Argument:
number—Must be a numeric expression.

Examples:
`EXP(0)` returns 1
`EXP(1)` returns 2.71828... (the value of e)
`EXP(sin(radians(45)))` returns 2.02811...

This example shows that the number may be produced from other calculations. In this case, the sine of 45 degrees is 0.71..., and $e^{0.71}$ equals 2.02811.

FACT

Format: FACT(number)

Definition: Computes the factorial of a number.

Argument:
number—Must be a positive whole number.

Example:
`FACT(5)` returns 120

This example shows that 5! is 120, because 5 x 4 x 3 x 2 x 1 = 120.

FRAC

Format: FRAC(number)

Definition: Computes the fractional part of a real number.

Argument:
number—Must be a numeric expression. The result is always positive.

Examples:
`FRAC(22.575)` returns 0.575

This example shows that the fractional part (to the right of the decimal point) is .575.

`FRAC(-22.767)` returns 0.767

This example shows a value returned with negative numbers.

Related Functions: INT, TRUNC

INT

Format: INT(number)

Definition: Returns the largest integer less than or equal to the number.

Argument:
number—Must be a numeric expression.

Examples:

`INT(5.76)` returns 5

`INT(-9.36)` returns -10

This example shows that the function doesn't always return the whole-number portion of the number.

Related Function: TRUNC

LN

Format: LN(number)

Definition: Calculates the natural logarithm of number.

Argument:

number—Must be a positive number.

Examples:

`LN(2.71828)` returns 1 (the natural log of *e* is 1)

`LN(EXP(-5))` returns -5

`LN(-5)` returns #NUM!(negative numbers aren't allowed)

These examples use a fixed number format.

LOG

Format: LOG(number {,base})

Definition: Calculates the logarithm of a number to a base.

Arguments:

number—Must be a positive number.

base—Must be a positive number, not equal to 1. If omitted, the base is assumed to be 10.

Examples:
`LOG(2)` returns 0.301
`LOG(2,10)` returns 0.301
`LOG(8,2)` returns 3.000
`LOG(8,1.5)` returns 5.129
`LOG(7.5,0.75)` returns -7.004

These examples use a fixed format with a precision of 3.

LOG10

Format: LOG10(number)

Definition: Calculates the logarithm of a number to base 10. It is the inverse of the number E in scientific notation.

Argument:
number—Must be a positive number.

Examples:
`LOG10(1000)` returns 3
`LOG10(C2)` returns 5 if cell C2 contains 100000

This example shows that log10 returns the exponent of a scientific representation of the number.

MOD

Format: MOD(number, divisor-number)

Definition: Calculates the remainder when the number is divided by the divisor-number. The result has the same sign as number.

Arguments:
number—Must be a numeric expression.
divisor-number—Must not be 0.

Examples:

`MOD(15,8)` returns 7

`MOD(4.5,-2)` returns 0.5

This example shows that negative numbers can be used, but the sign of the result is that of the number, not the divisor.

PI

Format: PI( )

Definition: Calculates the value of π (the ratio of the circumference to the diameter of a circle).

Argument: None.

Example:

`PI( )` returns 3.141592653...

This example shows the approximate value of π.

RAND

Format: RAND({number})

Definition: Returns a random number. If no argument is specified, the number returned is between 0 and 1.0

Argument:

number—Optional. If specified, returns a whole number between 1 and *number*.

Examples:

`RAND()*5` returns 0.67, 4.57, 2.1, etc.

This example returns a number between 0 and 1 and multiplies it by 5 to return real (fractional) numbers.

`RAND(5)` returns either 1, 2, 3, 4, or 5

This example shows that this is not the same as `rand()*5`. This example returns only whole numbers and is useful for specifying random cells.

`RAND(5.3)` returns either 1, 2, 3, 4, 5, or 6

This example shows that fractional numbers are rounded up before the random number is made.

`RAND(-4)` returns -1, -2, -3, or -4

This example illustrates the use of negative numbers.

ROUND

Format: ROUND(number, number-of-digits)

Definition: Returns the value of the specified number rounded to the requested number of digits from the decimal point. A negative number-of-digits represents the number of digits to the left of the decimal point. A positive number-of-digits represents the number of digits to the right of the decimal point.

Arguments:
number—Any number or numeric expression
number-of-digits—any number or numeric expression

Examples:
`ROUND(1572.589,-1)` returns 1570
`ROUND(1572.589,-2)` returns 1600
`ROUND(1572.589,-2.2)` returns 1600

This example shows that the number-of-digits can be expressed with a value that contains a decimal point, but the digits to the right of the decimal point will be ignored.

`ROUND(1572.589,1)` returns 1572.6
`ROUND(1572.589,2)` returns 1572.59

Related Functions: INT, TRUNC, FRAC

SIGN

Format: SIGN(number)

Definition: Returns 1 when the number is positive, -1 when it's negative, and 0 when it's zero.

Argument:
number—Any number or numeric expression.

Examples:
`SIGN(0)` returns 0
`SIGN(123.56)` returns 1
`SIGN(-500)` returns -1
`SIGN(ABS(-500))` returns 1

SQRT

Format: SQRT(number)

Definition: Calculates the square root of a number.

Argument:
number—Must be a positive number or numeric expression.

Examples:
`SQRT(25)` returns 5
`SQRT(12.25)` returns 3.5
`SQRT(-11)` returns #NUM!

The third example shows that you cannot take the square root of a negative number.

`SQRT(B11/4)` returns 5.5 (when cell B11 contains 121)

TRUNC

Format: TRUNC(value)

Definition: TRUNC truncates a number by discarding the fractional portion and keeping the whole number.

Argument:
value—Any numeric expression.

Examples:
`TRUNC(10.9)` returns 10
`TRUNC(-10.9)` returns -10

Related Functions: INT, ROUND, MOD

Statistical

AVERAGE

Format: AVERAGE(number1, number2, ...)

Definition: Calculates the average of a set of numbers given as arguments.

Argument:
number—Must be a numeric expression (a number, cell reference, or range).

Examples:
`AVERAGE(5,7,9,10)` returns 7.75

This example shows that the average of the four arguments is 7.75.

`AVERAGE(10,0,B2)` returns 10

When the value in cell B2 is 20, the result is (10 + 0 + 20)/3

The following two examples use the spreadsheet in figure A-8.

`AVERAGE(B3..B6)` returns 25
`AVERAGE(B3..B6,C3..C6)` returns 23.75.

Figure A-8
Sample spreadsheet

	A	B	C
1			
2			
3		10	20
4		20	30
5		30	40
6		40	0

COUNT

Format: COUNT(value1, value2, ...)

Definition: Returns the number of arguments given. Blank cells are not counted.

Argument:
value—Any text, number, cell reference, or expression.

Example:
`COUNT(10,20,B2)` returns 3

This example shows that there are 3 numbers in the list.

COUNT2

Format: COUNT2(searchvalue, value1, ...)

Definition: Returns the number of occurrences of the value in the first argument in the arguments that follow.

Argument:
number—Must be a search value (a number, cell reference, or range).

Example:
`COUNT2(10,20,10,34,10)` returns 2 because 10 (the value of the first argument) occurs twice in the arguments that follow.
`COUNT2(5,3,2,5,B3)` returns 1 if B3 does not contain 5 and returns 2 if B3 contains 5.

MAX

Format: MAX(number1, number2, ...)

Definition: Returns the largest number in the list of arguments (the maximum value found).

Argument:
number—Must be a numeric expression (a number, cell reference, or range).

Example:

`MAX(5, -2.2, -11)` returns 5

This example shows that 5 is the largest (maximum) number found in the list.

MIN

Format: MIN(number1, number2, ...)

Definition: Returns the smallest number in the list of arguments (the minimum value found).

Argument:

number—Must be a numeric expression (a number, cell reference, or range).

Example:

`MIN(10,0,-20.5,0.25)` returns -20.5

This example shows that -20.5 is the minimum value in the list.

PRODUCT

Format: PRODUCT(number1, number2, ...)

Definition: Calculates the product of the numbers in the argument list.

Argument:

number—Must be a numeric expression (a number, cell reference, or range).

Examples:

`PRODUCT(5,10,2,1)` returns 100

This example shows that 5 times 10 times 2 times 1 equals 100.

`PRODUCT(5,10,2,SIN(RADIANS(30)))` returns 50

This example shows that 5 times 10 times 2 times the sine of 30 degrees (one half, or 0.5) equals 50.

SUM

Format: SUM(number1, number2, ...)

Definition: Calculates the arithmetic sum of the numbers in the argument list.

Argument:
number—Must be a numeric expression (a number, cell reference, or range).

Example:
`SUM(5, 10, 2, 1)` returns 18

This example shows that the numbers in the list, when added, equal 18.

STDEV

Format: STDEV(number1, number2, ...)

Definition: Calculates the standard deviation of a list of numbers.

Argument:
number—Must be a numeric expression (a number, cell reference, or range).

Example:
`STDEV(15,21,30,56.886)` returns 18.500

VAR

Format: VAR(number1, number2, ...)

Definition: Calculates the variance of the sample numbers given as an argument list.

Argument:
number—Must be a numeric expression (a number, cell reference, or range).

Example:
`VAR(115,121,130,156)` returns 327

Text

CHAR

Format: CHAR(number)

Definition: Returns the ASCII character corresponding to the given number.

Argument:
number—Must be a numeric expression. May be fractional; the fractional part is discarded.

Examples:
`CHAR(65)` returns A
`CHAR(B7)` returns K (if cell B7 contains 75)
`CHAR(99.8)` returns c (*c* is the 99th ASCII code)

This example shows that a decimal number is valid, but the fractional portion of a number is ignored.

CODE

Format: CODE(text)

Definition: Returns the numeric ASCII code of the first character in text.

Argument:
text—Any text expression.

Examples:
`CODE("z")` returns 122 (for ASCII character *z*)
`CODE("Abracadabra")` returns 65 (for ASCII character *A*)

This example shows that only the first character of the text is examined.

CONCAT

Format: CONCAT(text1, text2, ...)

Definition: Joins (concatenates) strings of text.

Argument:
text—Any text expression.

Examples:
`CONCAT("how", " Does", " this work?")` returns "how Does this work?"

If cell B7 contains 5 and B8 contains "WOW!",

`CONCAT("Look at ",B7,": ",B8)` returns "Look at 5: WOW!"

EXACT

Format: EXACT(text1, text2)

Definition: Returns the logical value TRUE if both text1 and text2 are identical in case and characters.

Argument:
text1—Any text expression.
text2—Any text expression.

Examples:
`EXACT("dog","DOG")` returns FALSE

This example shows no exact match, since the function is case-sensitive. If both texts are of mixed case, and you want a case-insensitive comparision, you first need to convert the text using the UPPER or LOWER functions. See the following examples.

`EXACT(UPPER("dog"),"DOG")` returns TRUE
`EXACT(UPPER("Dog"),UPPER("dog"))` returns TRUE (DOG and DOG)
`EXACT(LOWER("Dog"),LOWER("dog"))` returns TRUE (dog and dog)
`EXACT("wow", "wow!")` returns FALSE
`EXACT(B7,"Mine")` returns TRUE (when cell B7 contains "Mine")

FIND

Format: FIND(find-text, in-text {,start-offset})

Definition: Searches for find-text within the in-text string, starting at the start-offset and returns the position where the find-text starts. The search is case-sensitive and blanks are counted.

Arguments:
find-text—Any text expression to be found.
in-text—Any text expression.
start-offset—Optional; must be a numeric expression evaluating to greater than or equal to zero.

Examples:
`FIND("e", "where in the World")` returns 3
`FIND("w", "where in the World")` returns 1
`FIND("W", "where in the World")` returns 14
`FIND("the", "where in the World")` returns 10

LEN

Format: LEN(text)

Definition: Calculates the length (number of characters) in text.

Argument:
text—Any text expression.

Examples:
`LEN("Cowabunga!")` returns 10
`LEN("Cow a bunga!")` returns 12
`LEN("")` returns 0
`LEN(B7)` returns 2 (when B7 is a 2-digit number, such as 42)
`LEN(B7)` returns 6 (when B7 is a 6-digit number, such as 26.875. The decimal is a character).

LEFT

Format: LEFT(text, number-of-characters)

Definition: Returns a string of text from within the value in the text argument. The returned text string starts from the leftmost character in the text argument and extends for the number of characters specified in the number-of-characters argument.

Argument:
text—Any text expression.
number-of-characters—Must be a numeric expression.

Examples:
`LEFT("Pauline Mitchell", 4)` returns Paul

This example shows that the first four characters in the text are Paul.

`LEFT("Pauline Mitchell",1)` returns P

This example shows that *P* is the first character in the text.

LOWER

Format: LOWER(text)

Definition: Converts uppercase characters in the text argument to lowercase.

Argument:
text—Any text expression.

Examples:
`LOWER("Wow, LOOK"!)` returns "wow, look!"

MID

Format: MID(text, start-position, number-of-characters)

Definition: Returns a string of text from within the value in the text argument. The returned text string starts from the start-position in the text argument and extends for the number-of-characters.

Arguments:
text—Any text expression.
start-position—Must be a numeric expression.
number-of-characters—Must be a numeric expression.

Examples:
`MID("New Example",3,6)` returns "w Exam". The returned value starts from the third character in the text and extends for 6 characters.
`MID("New Example",5.7,2)` returns Ex

This example shows that the fractional parts of numbers are ignored. The returned value starts from the fifth position in the text and extends for two characters.

`MID(C2,2,1)` returns 5 (when C2 contains the number 152)

NUMTOTEXT

Format: NUMTOTEXT(number)

Definition: Converts a number to its textual representation.

Argument:
number—Must be a numeric expression.

Example:
`NUMTOTEXT(6675.3)` returns 6675.3

Related Function: TEXTTONUM

PROPER

Format: PROPER(text)

Definition: Capitalizes the first character in each word.

Argument:
text—Any text expression.

Examples:
`PROPER("claris software works hard")` returns "ClarisSoftwareWorks Hard"
`PROPER("claris-software")` returns "Claris-Software"

This example shows that hyphens are treated the same as a space, tab, or carriage return; thus the next character is capitalized.

REPLACE

Format: REPLACE(old-text, start-num, num-chars, new-text)

Definition: Replaces the old-text with the new-text starting at the specified character in old-text and continuing for the specified number of characters.

Arguments:
old-text—Any text expression.
start-num—Must be a numeric expression.
num-chars—Must be a numeric expression.
new-text—Any text expression.

Example:
`REPLACE("my sister",4,6,"brother")` returns "my brother"

This example shows that starting with the fourth character and continuing for 6 characters (sister) the text is replaced with brother.

REPT

Format: REPT(text, num-of-times)

Definition: Repeats the text the specified number of times.

Arguments:
text—Any text expression
num-of-times—Must be a numeric expression, evaluating to greater or equal to zero.

Examples:
`REPT("*",5)` returns *****
`REPT("my dog barks",2)` returns "my dog barks my dog barks"

This example shows that text can be either a single character or a string of characters.

RIGHT

Format: RIGHT(text, number-of-characters)

Definition: Returns a string of text from within the value in the text argument. The returned text string starts from the end of the text argument and extends backwards for the number-of-characters.

Arguments:
text—Any text expression.
number-of-characters—Must be a numeric expression.

Examples:
`RIGHT("Pauline Mitchell",1)` returns l

This example shows that the second *l* in Mitchell is the rightmost character.

`RIGHT("New Example", 7)` returns Example

This example shows that, counting from right to left, the 7 rightmost characters are Example.

TEXTTONUM

Format: TEXTTONUM(text)

Definition: Converts text to its numeric representation, which can then be used by any function requiring a number as an argument. It examines the text for special characters, such as commas, dollar signs, and decimal points, and if they follow standard conventions for numbers, the number is converted. If the text has numbers and text in a nonconforming manner, all characters except the number digits are removed.

Arguments:
text—Any text expression.

Examples:
`TEXTTONUM("456.78")` returns 456.78
`TEXTTONUM("456abc78")` returns 45678
TEXTTONUM("456 12") returns 45612

This example shows that spaces and text are ignored when converting.

`TEXTTONUM("456 .12")` returns 45612

The last example shows that the text does not conform to standard number rules (there should not be a space before the decimal point). Because it does not conform, all nondigit characters (such as decimal points, commas, and dollar signs) are removed and ignored.

◆ **Note** This is not the same as the value function found in other applications.

Related Function: NUMTOTEXT

TRIM

Format: TRIM(text)

Definition: Removes any extra white space in the text, such as spaces.

Argument:
text—Any text expression.

Example:

`TRIM("my  dog bobo")` returns "my dog bobo"

This example shows that the extra spaces have been removed (trimmed) from the text.

UPPER

Format: UPPER(text)

Definition: Converts lowercase characters in the text to uppercase.

Argument:
text—Any text expression.

Example:
`UPPER("make uppercase")` returns "MAKE UPPERCASE"

Related Functions: LOWER, PROPER

Trigonometric

All trigonometric functions use radians as the units of measurement.

ACOS

Format: ACOS(number)

Definition: The arccosine of a number. The result is the angle in radians, in the range from 0 to π. The cosine of the result would produce the argument.

Argument:
number—Must be a numeric expression. Valid range is from -1.0 to 1.0.

Examples:
`ACOS(1)` returns 0

This example shows that the arccosine of 1 is 0 radians (which is also 0 degrees).

`ACOS(0.5)` returns 1.0472

This example shows that the arccosine of 1 is π/3 radians (1.0472).

`DEGREES(ACOS(0.5))` returns 60

This example shows that converting the result to radians yields 60 degrees.

ASIN

Format: ASIN(number)

Definition: The arcsine of a number. The result is the angle in radians, in the range from -π/2 to π/2. The sine of the result would produce the argument number.

Argument:
number—Must be a numeric expression. Valid range is from -1.0 to 1.0.

Examples:
`ASIN(1)` returns 1.570

This example shows that the arcsine of 1 is π/2 radians (1.57), which is 90 degrees.

`ASIN(-2)` returns #NUM!

This example shows that the arcsine of -2 is not defined (range must be from -1 to 1).

ATAN

Format: ATAN(number)

Definition: The arctangent of a number. The result is the angle in radians, in the range from -π/2 to π/2. The tangent of the result would produce the argument number.

Argument:
number—Must be a numeric expression.

Examples:

`ATAN(1)` returns .785

This example shows that the arctangent of 1 is .785 radians ($\pi/4$), which is 45 degrees.

`DEGREES(ATAN(1))` returns 45

ATAN2

Format: ATAN2(x-number, y-number)

Definition: The arctangent2 of a point at x-number and y-number. The result is the angle in radians, in the range from $-\pi$ to π.

Arguments:

x-number—Must be a numeric expression.

y-number— Must be a numeric expression.

Examples:

`ATAN2(1,1)` returns .785 ($\pi/4$ radians)

`ATAN2(-2,-2)` returns -2.356 ($-3\pi/4$ radians)

COS

Format: COS(number)

Definition: The cosine of a number, where number is the angle in radians. The arccosine of the result would produce the argument number.

Argument:

number—Must be a numeric expression.

Example:

`COS(1.0472)` returns 0.5

This example shows that the cosine of 1.0472 radians (which is 60 degrees) is 0.5.

DEGREES

Format: DEGREES(number)

Definition: Converts the number of radians to degrees. The result is an angle in degrees.

Argument:
number—Must be a numeric expression. Valid range is from -1.0 to 1.0.

Examples:
`DEGREES(PI())` returns 180

This example shows that π radians is equal to 180 degrees.

`DEGREES(RADIANS(30))` returns 30

This example shows the relationship between degrees and radians.

RADIANS

Format: RADIANS(number)

Definition: Converts the number of degrees to radians, which are the standard units used for trigonometric functions.

Argument:
number—Must be a numeric expression.

Examples:
`RADIANS(90)` returns 1.5708

This example shows that 90 degrees is equal to approximately 1.5708 radians.

`RADIANS(-360)` returns -6.2832

This example shows that -360 degrees is equal to -2 x π radians, which is -6.2832.

`RADIANS(DEGREES(PI()))` returns π (3.1415)

This example shows the relationship between degrees and radians.

SIN

Format: SIN(number)

Definition: The sine of a number, where number is the angle in radians. The arcsine of the result would produce the argument number.

Argument:
number—Must be a numeric expression.

Example:
`SIN(radians(30))` returns 0.5
This example shows that the sine of 30 degrees is one half (.5).

TAN

Format: TAN(number)

Definition: The tangent of a number, where number is the angle in radians. The arctangent of the result would produce the argument number.

Argument:
number—Must be a numeric expression.

Example:
`TAN(radians(45))` returns 1
This example shows that the tangent of a 45 degree angle is 1.

Glossary

absolute reference: *See* reference (absolute).

alignment (graphics documents, objects): The way objects are arranged in relation to each other and to graphics gridlines.

alignment (spreadsheet): The way data lines up against the left border of a cell, against the right border, or in the center.

alignment (text): The way text lines up in the center, along left and right margins, or when justified.

anchor points: In a spreadsheet document, the cell address of the upper-left and lower-right cells in a selected range of cells.

application environment: In ClarisWorks, one of five types of software you use to work in different types of documents and frames. Each environment has it's own set of menus.

argument: A value acted upon by a database or spreadsheet function. In a spreadsheet, the argument to a function can be a cell address, or in a database it can be a field name.

arrow keys: The up, down, left, and right arrow keys on a Macintosh keyboard.

arrow pointer: The indicator on the screen when the graphics tool is selected.

ASCII: Acronym for *American Standard Code for Information Interchange*. A standard that assigns a unique binary number to each text character and control character. ASCII code is used for representing text inside a computer and for transmitting text between computers.

attributes, text: The font, size, style, color, alignment, and line spacing assigned to text. Text attributes determine how text looks when you print.

autogrid: In a graphics document, a hidden control device that helps you create objects of precise sizes and keep the objects lined up on the page.

automatic recalculation (Auto Calc): In a spreadsheet document, the process of computing the results of formulas each time you confirm an entry in a cell.

axes: In a spreadsheet chart, the straight lines used to measure and compare data. Values are usually arrayed along the Y (vertical) axis of the chart. Divisions, or categories, are usually arrayed along the X (horizontal) axis. Pie charts have no real axis.

axis titles: Names you can add, using the text tool, to the X and Y axes of a spreadsheet chart.

bar chart: A chart that represents spreadsheet data as bars, side by side or stacked vertically. Often used to illustrate relative quantities.

body: In a database layout, the portion of the layout that holds the data in individual records.

bookmark: In a database document, the tab on the record book. You can drag the bookmark quickly from one record to another.

break: An invisible instruction that tells ClarisWorks to start a new column or page.

browse: A database feature you use to enter data; and add, edit, and sort records. Records are displayed in Browse according to the current layout.

buttons: In ClarisWorks documents, on-screen elements you click to give instructions to ClarisWorks and the Macintosh. In ClarisWorks help, on-screen elements you click to move to a topic.

calculation (manual): In a spreadsheet document, the process of computing the results of formulas only when you choose to do so.

cell: In a spreadsheet document, the box formed at the intersection of a column and a row.

cell address: In a spreadsheet document, the combined designation of column letter and row number that identifies a cell. The address of a cell in column H, row 12, is H12.

cell format: In a spreadsheet document, the width of columns, the height of rows, the inclusion or exclusion of borders, and the specifications for number, style, and text attributes.

cell range: In a spreadsheet document, a group of selected cells. You identify a cell range by the upper-left cell and lower-right cell, separated by two periods. An example is A2..H12.

cell reference: A cell address used in a formula.

chart: A graphic representation of the data in a spreadsheet, used to illustrate relationships among sets of data. A chart is a graphic object that can be pasted into another type of document.

chart title: In a spreadsheet chart, the name ClarisWorks uses for the chart. ClarisWorks takes the chart title from text in the cell at the upper-left corner of the chart range.

circular reference: A formula reference that directly or indirectly refers back to the formula cell.

Clipboard: A temporary storage area in computer memory where ClarisWorks places the most recent selection you have cut or copied.

Cell Reference: A cell address used in a formula.

column: In a spreadsheet, the vertical arrangement of cells identified by a letter designation at the top.

constant data: In a spreadsheet document, a value you type, as opposed to a value that is the result of a formula.

copy: To place a copy of selected text or objects on the Clipboard without removing the selection from its original location. You can paste the contents of the Clipboard elsewhere.

crossbar pointer: The indicator on the screen when the spreadsheet tool is selected.

current cell: The active cell. What you type in the data entry bar goes into the current cell.

cut: To remove selected text or objects and place a copy of the selection on the Clipboard. You can paste the Clipboard contents elsewhere.

data entry bar: In a spreadsheet document, the box used at the top of the window to enter or edit data or formulas in a selected cell.

data series: In a spreadsheet chart, the values from the spreadsheet that are plotted or drawn in the chart. A data series usually represents rows.

database: A collection of information; also, software you use to collect, organize, and search for information.

delete: To remove (erase) selected text or objects from a document.

delimiters: Punctuation marks used when you merge a database with a text document or frame. In the text document, delimiters distinguish a field name from ordinary text.

dictionary (installing): The process of letting ClarisWorks know where to look for dictionaries when you check spelling. You need to install a dictionary only when you want to switch to a different dictionary.

dictionary (Main): The primary dictionary against which ClarisWorks checks spelling.

dictionary (User): A dictionary you create for specialized words that don't appear in the Main dictionary.

divisions: In a spreadsheet chart, the intervals or categories used to plot values in a data series. Divisions usually represent columns. Also, the tick marks on a ruler.

document: A Macintosh file created by an application. In ClarisWorks, you can create and work with five different types of documents, each designed primarily for a specific task—word processing, spreadsheet work, database management, graphics, or communications.

editing: The process of revising a computer-based document.

environment: *See* application environment.

existing document: A document you have previously saved.

field: In a database record, an element that holds a category of information.

field (calculation): In a database document, a field that contains the results of a formula you enter when you define the field.

field definition: In a database document, a field name and certain additional attributes, such as the type of data the field can contain. The data type determines the work you can do with the field.

field (merge): In the mail merge process, a database field whose contents will be inserted into the target text document when you print.

field (number): In a database document, a field that can contain any number you can type, including decimal points, if appropriate.

field (search): In a database document, the field or fields in a find request that contain the search criteria you type.

field (selected): In a database document, the current (active) field.

field (summary): In a database document, a special field you use to organize and summarize data in different records when you print or use Page View.

field (text): In a database document, a field that can contain any characters you can type—letters, numbers, or symbols.

fields (date and time): In a database document, fields that must contain dates or times, respectively.

fields (matching): In a database document, a method for selecting records that match search criteria you enter as a formula, rather than as search criteria in a find request.

file format: The way an application organizes and stores the contents of a document.

fill tool: *See* tool (fill).

filling down: In a spreadsheet document, the process of pasting data or a formula from the top selected cell into a range of cells directly below.

filling right: In a spreadsheet document, the process of pasting data or a formula from the left-most selected cell into a range of cells to the right.

find: A database feature used to search for records that match search criteria you enter in a find request.

find request: A view of a database used to search for records that contain specific search criteria in certain fields.

font: A collection of type with a particular appearance.

footer: A page element that appears at the bottom of every printed page in a document.

footnote: A comment or citation at the bottom of a text page that refers to a numbered (or custom) signal in the text.

format: A way of displaying numbers and text.

fractional character widths: An adjustment that compensates for irregular character spacing when you print certain fonts and styles.

frames: Graphic objects that can contain text, graphics, or spreadsheets.

function: A predefined formula that performs mathematical, logical or textual calculations, acting on values you specify or supply.

fv: An argument that represents the future cash value of an investment. Used in business and financial functions.

graphics ruler: The measuring scale you use to control the automatic grid and the spacing of gridlines in a graphics document.

graphics tool: The tool you use to select and work with objects and to activate graphics menus.

gridlines: A matrix of dotted lines used to size and align objects in a graphics document.

grouping: The process of consolidating several selected objects into one object.

handles: Black squares ClarisWorks places at the edges of selected objects. You use handles to resize and reshape objects.

header: A page element that appears at the top of every printed page in a document.

I-beam pointer: The indicator on the screen when the text tool is selected.

invisible characters: Characters that represent formatting instructions you give from the keyboard by pressing Return, Tab, or the Space bar.

justification: The process of adjusting text within text margins.

layout: In a database document, a graphic representation of the way records will look when you browse or print records. You can use different layouts to display, organize, and print the same information in different ways. Also, a database feature you use to create and revise layouts.

layout (blank): In a database document, a layout that contains no fields.

layout (columnar report): In a database document, a layout that shows and prints fields in columns. Each record appears as a row.

layout (labels): In a database document, a layout that shows and prints field contents in an arrangement suitable for mailing labels.

layout (standard): In a database document, the preset arrangement of all the fields you have created, with each field on a separate line and the fields stacked vertically.

legends: In a spreadsheet chart, the labels for the data series and divisions on the chart.

logical expression: Any statement which returns a value of TRUE(1) or FALSE(0).

line chart: A chart that represents spreadsheet data as lines. Often used to show trends over time.

locking: The process of protecting a selected object from most changes.

macro: A shortcut command used to automate repetitive tasks. A single command from the keyboard performs a series of mouse and keyboard activities.

mail merge: The process of inserting data from a database document into a text document or frame, used primarily to print individually addressed mailings.

margins: The blank space around the top, bottom, left, and right of document contents.

mixed reference: *See* reference (mixed).

nper: An argument that represents the number of periods. Relates to the interest rate. Used in business and financial functions.

number format (currency): A format that adds a currency symbol to a number.

logical expressions: Any statement which returns a value TRUE(1) or FALSE(0).

number format (fixed): A format that rounds numeric entries to a fixed number of decimal places.

number format (general): A format that causes a number to fill a cell with a floating number of decimal places to the right of the decimal point. This format displays the number in the best possible fit for the selected cell width.

number format (percent): A format that multiplies a number by 100 and displays the number in a fixed decimal format with a percent sign.

number format (scientific): A format that displays entries as exponential powers of 10.

object: An element that you can select by itself, resize, and move around within a document.

objects (sliding): In a database document, a method for closing up space within the contents of adjacent fields when you print.

online: Available on the computer. Also, the state of being in direct communication with another computer via a network or telephone line.

online help: A system of instructions to which you have direct access on a computer screen.

operands: In a formula, the values acted on to perform a calculation.

operators: Symbols used in a formula to define the action to be performed.

order (ascending): Alphabetical sequence (A to Z) for words, lowest-to-highest order for numbers, and earliest to latest for dates and times.

order (descending): Reverse alphabetical sequence for words (Z to A), highest-to-lowest order for numbers, and latest to earliest for dates and times.

order (sort): In a database or spreadsheet document, the hierarchy of fields or cells by which you want ClarisWorks to sort. Sort order also describes the method used to sort data (in ascending or descending order).

order (stacking): The arrangement of objects in a document. The most recently created object is placed at the front of the stack (you can rearrange the stacking order by moving objects to the front or back).

order (tab): In a database document, the sequence of fields through which you move when you press Tab. The order is preset to the order in which you created the fields, but you can change it.

page break: *See* break.

page guides: The dotted borders around each page that show where the document's top, bottom, left, and right margins are set.

page view: A view that shows you how a document will appear when you print. Page view shows margins and headers and footers, if any.

panes: Split views of the same document. Panes can be horizontal (across the screen) or vertical (down the screen).

paragraph: The basic formatting unit of a text document. Text format changes apply to all of a selected paragraph or paragraphs (except for individually styled words and lines).

paragraph (selected): An active paragraph. A paragraph is selected when the text insertion point is blinking anywhere in the paragraph, whether or not the entire paragraph is highlighted.

part: In a database document, a section of a layout used to organize data on the page or to summarize data within the document.

part (footer): In a database layout, a repeating element that appears at the bottom of each page.

part (grand summary): In a database layout, a part that can contain summary fields which apply to all records.

part (header): In a database layout, a repeating element that appears at the top of each page.

part (leading grand summary): In a database layout, a grand summary part that is placed above the information summarized by the part.

part (sub-summary): In a database layout, a part that applies a calculation to the values in a certain field for a group of sorted records.

part (trailing grand summary): In a database document, a grand summary part that is placed below the information summarized by the part.

pasting: The process of placing the contents of the Clipboard in the same or a different location. *See* cut, copy, and Clipboard.

pen tool: The tool you use to change the width, pattern, and color of lines or an object's border.

pica: A typographic measure equal to 1/6 inch (12 points).

pie chart: A circular chart that represents spreadsheet data as slices of a pie. Often used to show the relative contribution of values to a total.

point: A typographic measure equal to 1/72 inch.

pmt: An argument that represents the payment to be made per period. Used in business and financial functions.

precedence: In a spreadsheet or database formula, the sequence in which calculations are performed when a formula has more than one operator.

precision: In a spreadsheet or database document, the number of digits displayed to the right of a decimal point. For numbers in scientific format, precision applies to the mantissa.

protected cell: In a spreadsheet document, a cell you have locked to prevent changes.

pv: An argument that represents the present cash value of an investment. Used in business and financial functions.

record: In a database document, a collection of fields that contain data about a single activity or transaction. Corresponds to a printed form such as an invoice.

record book: In a database document, the book icon that shows the number of the current record. *See* bookmark.

record (omitted/hidden): In a database document, a record that has been temporarily removed from the active set of records.

record (selected): In a database document, one or more records selected for the next action.

reference (absolute): In a spreadsheet document, a reference to a specific cell, identified by its column and row address.

reference (mixed): In a spreadsheet document, a combination of relative and absolute cell references.

reference (relative): In a spreadsheet document, a reference to a cell identified by the cell's location in relation to other cells, not by its column and row address.

request (find): In a database document, a blank view of the current layout, used to enter search criteria.

row: In a spreadsheet, the horizontal arrangement of cells identified by a number designation on the left.

scatter chart: A chart that represents spreadsheet data as unconnected points. Often used to show how points group around a value.

search criteria: Characters you enter to look for certain text (word processing), records (database) or cells (spreadsheet).

selection: The process of activating text, a text paragraph, a spreadsheet cell, or an object so that you can work with it.

shift constraint: The process of holding down the Shift key while you manipulate an object to limit the object to a certain angle or shape.

size (text): The measure of type size in points.

smoothing: The process of rounding out sharp angles in a polygon or freehand graphics object.

spacing (line): The vertical distance from the base of one line of type to the base of the next line below. Line spacing defaults to one line and can be set in points or lines.

spreadsheet: A document arranged in columns and rows, usually used to work with numeric data. A spreadsheet can contain formulas that allow complex "what-if" analyses of data.

spreadsheet tool: *See* tool (spreadsheet).

stacked windows: *See* order (stacking) and windows (stacked).

stationery: A document in which you save all the formatting of an original document. Stationery can be used repeatedly as a template for new documents.

status panel: The area in a database window that shows the sort status and the status of found records.

style (text): The way a font appears on the screen and when you print.

tab: An invisible character you insert to cause text to line up at a point called a tab stop on the text ruler when you press Tab.

tab (align): A tab used to align text on a decimal point, or other character you specify.

tab (center): A tab used to center text on the tab position.

tab (left): The standard tab, used to align the left end of text on the tab position.

tab marker: An icon you drag into the text ruler to set a tab stop.

tab order: In a database document, the order in which you move through fields in a record when you press the Tab key.

tab (right): A tab used to align the right end of text on the tab position.

tabs (preset): Tab stops that are automatically set when you create a new text document. Tab stops are preset at 1/2-inch intervals.

text expression (text string): Characters you type, including alphabetic and numeric characters, as search criteria or as values in a formula.

text insertion point: A blinking vertical line that indicates where the next text character you type will appear.

text ruler: The measuring scale you use to control the left and right margins of a text page, the indentation of paragraphs, text justification, tab settings, and the spacing between lines.

text tool: *See* tool (text).

thesaurus: A desk accessory you can use to find synonyms for a selected word or a word you specify.

tiled windows: *See* windows (tiled).

tool: An iconic representation of a ClarisWorks function.

tool (drawing): A tool you use to draw shapes and lines in the graphics environment.

tool (fill): The tool used to add or change the pattern and color of an object.

tool (graphics): The arrow pointer used to resize, move and select objects.

tool palette: A collection of tools used to draw objects, fill objects with different patterns and colors, and change line width, color and pattern.

tool (pen): The tool used to change line width, color, and pattern. You can also add arrowheads to lines.

tool (spreadsheet): The crossbar pointer, used to enter data in a spreadsheet and draw spreadsheet frames.

tool (text): The tool used to type text and draw text frames.

translator: A utility that allows you to convert documents from other applications to ClarisWorks documents, and vice versa.

ungrouping: The process of restoring the individuality of objects that have been consolidated into one object.

unlocking: The process of removing protection (locking) from a selected object so that the object can be changed.

unprotected cell: In a spreadsheet document, a cell that has not been locked to prevent changes.

unsmoothing: The process of restoring angular shapes to polygon or freehand graphics object that has been smoothed.

views (multiple): Separate windows for the same document.

window (active): The view in which whatever you do takes effect. A window is active when the title bar shows lines beside the title and the scroll bar is shaded.

windows (stacked): An arrangement of windows that exposes a corner of each window. Stacking makes it more convenient to click back and forth between windows. *See* order (stacking).

windows (tiled): An arrangement of windows that fills the screen with any open windows and makes each window the same size.

word wrap: A word processing feature that automatically flows text from one line to the next, without requiring you to press Return.

work area: The part of a document within the margins that contains what you type or draw.

WYSIWYG: A method of displaying a document on the screen so that you see the document as it will appear when printed. The letters (pronounced "wizz-ee-wig") stand for "What You See Is What You Get."

zoom controls: Representations of a large and a small mountain that you click on to enlarge or reduce the view of a document's contents.

zoom percentage: The amount of reduction or enlargement of the active document's contents. Actual size is 100%. Percentages over 100 enlarge your view of a document's contents; percentages under 100 reduce it.

zoom percentage box: A box that shows the current percentage of enlargement or reduction of document contents.

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